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Abstract

Little is known about how investors select socially responsible investment (SRI) funds. Investors in SRI funds may care more about social or ethical issues in their investment decisions than about fund performance. This paper studies the money-flows into and out of the SRI funds around the world. We find that ethical money chases past returns. In contrast to conventional funds' investors, SRI investors care less about the funds' riskiness and fees. Funds characterized by shareholder activism and by in-house SRI research attract more stable investors. Membership of a large SRI fund family creates higher flow volatility due to the lower fees to reallocate money within the fund family. SRI funds receiving most of the money-inflows perform worse in the future, which is consistent with theories of decreasing returns to scale in the mutual fund industry. Finally, funds employing a higher number of SRI screens to model their investment universe receive larger money-inflows and perform better in the future than focused funds.

Keywords: money-flows, ethical funds, socially responsible investing, persistence in performance, investment screens, corporate governance screens, SRI

JEL classification: G10 and G19

"Invest with your brain and heart. Invest for our planet… The Funds give investors the ability to unite their financial goals with environmental progress"

-- from the prospectus of Sierra Club Funds

Particular to the socially responsible investment (SRI) funds, often also more narrowly called ethical funds, is that both financial goals and social objectives are pursued. Over the past decade, these SRI funds experienced a tremendous growth in most developed economies around the world.[1] SRI comprises assets under management worth $2.1 trillion, representing approximately 11% of the total assets under professional management in the US (Social Investment Forum, 2003).[2]

This paper studies the money-flows into and out of the SRI mutual funds around the world. Some recent studies on the behavior of investors in mutual funds show that both financial and non-financial fund attributes affect the choice of a particular mutual fund or hedge fund. Risk-adjusted as well as raw past performance significantly affect the money-flows of mutual funds (see, e.g. Chevalier and Ellison, 1997; Goetzmann and Peles, 1997; Sirri and Tufano, 1998; Del Guercio and Tkac, 2002). While the top performing mutual funds attract most of the inflows, the weakly performing funds are hardly affected by outflows. This indicates that once money is invested, it tends to be rather sticky (Gruber, 1996). Furthermore, non-financial attributes like mutual fund visibility (Sirri and Tufano, 1998) and mutual fund advertising (Jain and Wu, 1999) have a significant impact on the money-flows to mutual funds. For hedge funds similar results are reported by Agarwal, Daniel and Naik (2004).

In spite of the fact that SRI has become a multi-trillion dollar market, little is known about how investors select funds with explicit non-financial attributes.[3] Investors in SRI mutual funds may

[1] The terms SRI funds and ethical funds are often used interchangeably, although strictly speaking ethical funds are a subset of SRI funds. The latter comprise funds whose investment universe is confined by environmental, ethical, corporate governance or social screens. Ethical screens are based on a specific ideology or religion. For example, "The investment objective of the Ave Maria Catholic Values Fund is to seek long-term capital appreciation from equity investments in companies that do not violate the core values and teachings of the Roman Catholic Church."

[2] The quality of data on the institutional SRI market (i.e. the SRI assets under professional management by pension funds, insurance companies, etc.) is poor and does not allow a thorough analysis.

[3] Most of the existing empirical studies on SRI focus on fund performance. For instance, Hamilton, Joe and Statman (1993) and Statman (2000) study US SRI funds; Luther, Matatko and Corner (1992) and Gregory, Matatko and Luther (1997) examine UK SRI funds; Bauer, Derwall and Otten (2003) study Canadian SRI funds; Bauer, Otten and Tourani Rad (2004) analyze Australian SRI funds; and Kreander, Gray, Power and Sinclair (2005) and Bauer, Koedijk and Otten (2005) examine international SRI funds. These studies suggest that the average risk-adjusted returns of SRI mutual funds do not differ significantly from the average performance of non-SRI mutual funds. Using a Bayesian approach, Geczy, Stambaugh and Levin (2003) show that the fund selection process of ethical investors determines the performance of the SRI funds relative to a conventional portfolio.

care more about ethical, social, environmental, or corporate governance aspects in their investment decisions and pay less attention to past fund performance.

In addition to the fact that we study the behavior of investors around the world who explicitly care about non-financial investment screens in portfolio selection, and that we hence contribute to the typology and geographical scope of mutual fund research, we make the following contributions to the literature. First, we study the determinants of money-flows in the SRI fund industry in a multivariate framework. To our best knowledge, Bollen and Cohen (2005) wrote the only study on this issue, but concentrated on a univariate analysis of money-flows and past returns for US SRI funds. In contrast, we analyze the question whether or not investors chase past returns, while we study simultaneously other dimensions of the SRI decision: fund size, age, risk, the fee structure and the reputation of fund families. In addition, investors may evaluate a fund's performance relative to other funds in their home country (Sirri and Tufano, 1998), and consider trends in past performance (Barberis, Shleifer and Vishny, 1998). This emphasizes the importance to study the determinants of money-flows in a multivariate framework.

Second, we examine the determinants of the volatility of money-flows of SRI funds. Massa (2003) states that a high volatility of flows suggests that the funds' investors are myopic in making investment decisions, whereas low flow volatility implies that investors have longer investment horizons. Bollen and Cohen (2005) document that, in the US, the flow volatility is lower in SRI funds than in non-SRI funds. We contribute to this line of research by relating flow volatility to past performance and various fund characteristics.

Third, we investigate whether or not money-flows can predict future fund performance. Berk and Green (2004) introduce a Bayesian model in which rational investors use past performance to update their information on managerial ability. According to this model, investors chase past performance which explains the strong money-flows to the best performing funds. However, if fund managers face decreasing returns to scale, money-flows into the better performing funds may reduce future abnormal returns. In that case, we would not expect performance persistence. Specifically, we investigate whether or not the SRI funds receiving more inflows will perform better in the future, and how future performance depends on fund characteristics and the type of SRI screens employed. Put differently, we ask the question whether 'ethical' money is financially smart.

Fourth, related to this question is our analysis of the impact of various types of SRI screens on SRI fund flows and performance. As mentioned above, investors may derive utility from investing in companies implementing corporate policies which are congruent with the investors' social or ethical concerns. The fact that SRI screens constrain the investment universe may influence fund performance. In spite of the fact that SRI screens play a central role in the SRI fund industry,

the existing research on SRI funds has not yet investigated the impact of screens on flows and future performance. The analysis of the predictive power of money-flows and the use of screening activity to generate superior returns (the above issues three and four) enable us to answer the question whether or not ethical money is financially smart.

The main findings of our paper can be summarized as follows. First, SRI funds with better past returns or higher return rankings attract higher money-inflows, whereas the flow-performance relation is weaker when past performance has been poor. In line with Barberis, Shleifer and Vishny (1998), SRI investors direct more money to funds exhibiting persistence of good performance. These results imply that SRI investors chase past performance and that they are more sensitive to good than to poor past performance. In addition, we demonstrate that higher inflows arise in SRI funds that are smaller, younger or are members of large fund families. The latter result may reflect the impact of fund family reputation but also the fact that investors are usually allowed to switch at low cost to other funds of the family. In contrast to conventional investors, SRI investors are not sensitive to past risks nor to the fund fees (i.e. management fees and load fees), which may encourage fund management companies to enter the SRI niche.

Second, the flow volatility of SRI funds is higher when past returns have been strong and is higher for smaller and younger SRI funds with higher risk and lower fees. In addition, the volatility increases when the funds belong to a large fund family, when this family is the domestic market leader, and when the family includes a top performing fund. We also document that funds characterized by shareholder activism and by in-house SRI research attract more stable investors.

Third, the future performance of SRI funds is worse when these funds attract more money-flows, or when they are larger. A two-standard deviation shock in average money-flows yields –4.6% abnormal returns (annually) in the future. It suggests that, by reallocating across different SRI funds, individual investors reduce their wealth. Our finding is consistent with the theories formulating the decreasing returns to scale in mutual fund industry (Berk and Green, 2004).

Fourth, screening intensity matters: funds with more SRI screens attract more money-flows and have better returns in the future although funds concentrating on environmental and ethical (c.q. religious or ideological) issues generate lower future returns. Consequently, the question 'Is ethical money financially smart' receives a nuanced answer. SRI investors chase past returns and they are not able to select funds that will generate superior performance. Still, high SRI screening intensity yields higher future performance than focused funds.

The remainder of the paper is organized as follows. Section I gives the institutional background of the SRI mutual fund industry. In Section II we discuss the methodology and introduce the data. Sections III and IV examine the determinants of money-flows and flow volatility,

respectively. Section V focuses on the relation between money-flows and future fund performance, and Section VI concludes.

I. Institutional Background

Modern ethical investing roots in the growing social awareness of investors over the past decades.[4] As SRI investors have diverse social objectives, SRI funds usually employ a combination of negative or positive SRI screens in the process of constructing portfolios. A typical *negative* screen is applied to an initial asset pool, such as S&P 500 stocks from which specific sectors (i.e. alcohol, tobacco and defense industries) are excluded. *Positive* screens are employed to select companies meeting superior standards on issues such as corporate governance or environmental protection. The use of positive screens is often combined with a '*best in class*' approach: firms are ranked within *each* industry based on social criteria; subsequently, only those firms passing a minimum threshold in each industry are selected as potential candidates for inclusion into a portfolio. For instance, the chemical firms polluting least are selected as candidates for SRI portfolios. Moreover, SRI funds often engage in shareholder activism, where fund managers attempt to influence the company's actions through direct dialogue with the management or by voting at annual general meetings. SIF (2003) reports that, in 2002, SRI investors in the US filed 292 shareholder resolutions on ethical, social or environmental issues.

It is also important to denote that mutual fund managers generally have different objectives than funds' investors. The former are mainly interested in money-inflows and the resulting management fees, while the latter desire high risk-adjusted returns at low fees. Furthermore, fund investors are not formally trained in portfolio analysis, and their investment decision is influenced by the marketing efforts of investment funds and by the media attention the funds receive (Sirri and Tufano, 1998). Consequently, mutual fund managers may implement strategies that enhance their own revenues but are not in the best interest of the funds' investors. These conflicts of interests may induce excessive risk-taking by the fund managers (Chevalier and Ellison, 1997).[5] Given that the

[4] Traditional SRI investing has religious origins. The first *modern* ethical mutual fund, the Pax World Fund, was founded in 1971 in the US. Created for investors opposed to the Vietnam War (and militarism in general), the fund avoided investments in weapons contractors. In the 1980s, the concerns about the racist system of apartheid in South Africa became a focal point of ethical investors. SRI investors urged funds not to include South-African firms nor western firms with South-African subsidiaries into their portfolios. Since the early 1990s, issues like environmental protection, human rights, and labor relations have become common in the investment screens of SRI funds. Furthermore, a series of corporate scandals has turned corporate governance and responsibility into a focal point of SRI investors.

[5] In terms of governance, there are important differences between a mutual fund and a corporation. Tufano and Sevick (1997) state that the fund's board of directors oversees the fund management and represents the

sales of funds' shares to new shareholders require high marketing expenses, the growth in fund assets does not necessarily generate value for the incumbent shareholders (Sirri and Tufano, 1998). Massa (2003) finds that the degree of product differentiation negatively affects fund performance, but fund families have incentives to invent new funds because 'the more fund families are able to differentiate themselves in terms of non-performance-related characteristics, the less they need to compete in terms to performance'. Khorana and Servaes (2004) confirm that product innovation generates business if the new fund is more differentiated from the existing funds and is in a specific niche.

SRI funds differ from conventional mutual funds in several ways. First, SRI funds employ SRI screens that restrict their investment opportunity set. The exclusion of companies based on social, environmental, corporate governance or ethical screens may reduce the diversification possibilities and negatively influence the performance of the SRI funds in comparison to conventional funds. Alternatively, the use of investment screens can also be regarded as an active selection strategy of firms with characteristics that are believed to yield superior performance. They are used as filters to determine e.g. managerial competence, superior corporate governance etc. (Bollen and Cohen, 2005). Second, investors in SRI funds may also derive non-financial utility by investing in companies adopting specific social, environmental or ethical policies which correspond to these investors' concerns. For example, an investor who feels committed to protecting the environment may decide not to invest in companies causing high pollution, even though such companies may provide interesting investment opportunities in terms of risk-return tradeoff. Consequently, SRI funds may attract specific types of investors. For example, Beal and Goyen (1998) report that SRI funds' investors in Australia are more likely to be female, older, and more highly educated than the investors investing in the whole universe of stocks listed on the Australian Stock Exchange. Bollen and Cohen (2005) report similar evidence for the US. To the extent that the types of investors in SRI funds are different from those investing in conventional funds, the determinants of the money-flows into and out of SRI funds and conventional funds may also differ. Third, over the past decade, national governments in Europe and elsewhere passed regulations

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interests of shareholders. However, this board is not elected by the fund's shareholders but is elected by the fund management company. Even the independent directors are elected by the fund management company and serve on many funds of the same company. In addition, the fund's board has little contact with the fund's shareholders and is not required to hold annual meetings. It is also very rare that the boards remove underperforming fund managers. Finally, mutual fund shareholders have little or no bargaining power to set the fund management's compensation.

regarding social and environmental investments and savings, which had a positive impact on the growth of the SRI mutual fund industry.[6]

Given the above differences between SRI and conventional mutual funds, it is interesting to investigate the determinants of money-flows in the SRI fund industry, and the relation between money-flows and future fund performance. In the following section we will discuss our data and research methodology.

II. Data and Methodology

A. Sample Selection

In order to examine the determinants of the money-flows in the SRI mutual fund industry around the world, we construct a database that contains socially responsible equity mutual funds domiciled in 17 countries and 4 offshore jurisdictions[7]. We gather data on SRI funds from: (i) *Europe (excluding the UK),* more specifically: from Austria, Belgium, France, Germany, Ireland, Italy, Luxemburg, Netherlands, Sweden, and Switzerland, (ii) the *UK,* including Guernsey and the Isle of Man, (iii) the *US,* and (iv) the *Rest of the World*, more specifically: Australia, Cayman Islands, Japan, Malaysia, the Netherlands Antilles, Singapore, and South Africa. We also collect data on conventional equity mutual funds in the UK, which serve as our reference group. Our primary data source is the Standard & Poors' Fund Service (Micropal). For each fund, the database contains monthly Net Asset Value[8] (NAV), monthly Assets Under Management (AUM), and other fund characteristics such as the management fees, load fees and the inception date. Our sample period extends from January 1992 to December 2003. We focus on this period for two reasons: first, the number of SRI mutual funds prior to our sample period is tiny. Second, prior to 1992, the AUM in the S&P database is recorded on a quarterly basis rather than on a monthly one.

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[6] Since the early 1990s, the German and Dutch governments have granted tax advantages to investments in renewable energy. In the UK, the Amendment to the 1995 Pensions Act came into force in 2000 and required the trustees of occupational pension funds in the UK to disclose in the Statement of Investment Principles "the extent (if at all) to which social, environmental and ethical considerations are taken into account in the selection, retention and realization of investments". Since 2001, Australia, Belgium, Germany, Italy and Sweden, have passed similar regulations regarding the disclosure of the extent to which pension funds adopt SRI screens in their investment decisions.

[7] We collect data on socially responsible mutual funds for 26 countries and 4 offshore jurisdictions. However, because monthly data on assets under management of funds are not available for five countries, we exclude the funds domiciled in Canada, Finland, Hong Kong (China), Norway and Spain. The four offshore jurisdictions included in our sample are the Cayman Islands, Guernsey, the Isle of Man, and the Netherlands Antilles.

[8] The Net Asset Value is defined as the per share value of a fund's portfolio. The NAV in the S&P database is net of annual management fees, inclusive of any distributions and denoted in local currency.

To determine the universe of SRI funds, we create a list of mutual funds, domiciled in 21 countries and offshore jurisdictions, which bear labels such as 'ethical', 'socially responsible', 'ecology', 'Christian value' or 'Islamic' in the Standard & Poors' Fund Service database. S&P classifies mutual funds as ethical or socially responsible investment funds if the fund managers specify in the fund prospectuses that they have social, environmental or ethical investment goals.

Our sample includes a small number of religious funds. These funds typically employ traditional, negative SRI screens such as the exclusion of tobacco and alcohol-producing firms combined with screens based on religious convictions, such as avoiding insurance companies covering non-married couples (e.g. by some US Christian funds) or avoiding pork producers (e.g. by Islamic funds).

When a mutual fund is sold in two or more countries, the S&P list of socially responsible funds reports it as two or more funds. To avoid the double accounting of AUM, we exclude such duplicated records. For the same reason, we exclude multiple share classes for a given fund if the total AUM across all share classes is reported rather than the AUM of the individual share classes. The above procedure reduces our sample size from the starting sample of 1,343 funds to 718 socially responsible mutual funds issued all around the world.

We subsequently verify the SRI screening policies of these funds. We first develop a list of SRI screens used by SRI funds around the world. Combining the information from a variety of data resources[9], we identify 21 screening criteria, which are further classified into four major categories. Table 1 reports the four main categories and the underlying screens. The first category, denoted as 'Sin', contains funds that avoid investing in firms from the so-called 'sin-industries', which produce e.g. tobacco, alcohol, or weapons. The funds in the 'Ethical' category exclude e.g. firms that test their products on animals, produce equipment facilitating abortion, develop genetic-modified products, or violate Islamic or Christian principals. Funds that employ screens checking for superior corporate governance, good labor relations or a good human rights track record (e.g. no child labor) are denoted as 'Social' funds. Finally, funds that avoid utilities operating nuclear power plants or that invest in environmentally friendly firms are referred to as 'Environmental' funds. Note that an SRI fund usually employs a combination of screens from several categories. For instance, the TIAA-CREF Social Choice Equity Fund excludes companies that derive any revenues from alcohol, tobacco, gambling or weapons, and invests in companies meeting high standards in labor relations, corporate governance, environmental performance. For each fund in our initial sample, we hand-

[9] Our information sources are Social Investment Forum (2003), Natural Capital Institute (www.responsibleinvesting.org), SiRi SRI Fund Service (www.avanzi-sri.org), and Sustainable Investment Platform (www.sustainable-investment.org).

collect and verify the information on social screens using the fund prospectuses and websites, and gather in many cases more information by direct contact with fund managers (by phone, by email or via on-site interviews). Furthermore, we also collect information on whether a fund engages in shareholder activism and whether the fund bases its screening activities on an in-house SRI research team. Hence, the mutual funds we accept as SRI funds employ at least one of the above screens as part of their investment policy.

Consistent with prior studies on the money-flows of mutual funds, we restrict our sample to equity mutual funds, excluding fixed-income, balanced, and money-market mutual funds. We also do not include funds that are not available to individual investors directly, but are only available through institutions such as pension funds, insurance companies, or charities and foundations. The above process results in a sample of 461 equity SRI funds. Finally, after dropping the funds for which data on assets under management are not available, our final sample of SRI funds comprises 410 equity mutual funds domiciled in 21 countries or offshore jurisdictions around the world. Our benchmark sample of conventional funds consists of 649 non-SRI equity mutual funds in the UK.

[Insert Tables 1 and 2 about here]

The cross-sectional characteristics of the equity SRI fund industry across countries as captured by our sample are described in Table 2. We identify a mutual fund's nationality by its legal domicile. It should be noted that the domicile may be different from the countries where the funds are sold. For funds in the four offshore jurisdictions, the investors' nationalities are unobservable. Another extreme case is Luxemburg, funds of which are sold across Europe. Fund managers choose Luxemburg and offshore jurisdictions as their domiciles mainly because of favourable tax laws. [10]

Table 2 reports the number of funds, the number of fund families (i.e. the financial institution that issue mutual funds), the average and median age of funds, and the average and median assets under management per fund for our sample of SRI and non-SRI funds in December 2003. The largest number of SRI funds in our sample comes from Europe excluding the UK (in total 182 funds, part of 100 different fund families), followed by the US (93 funds), the UK (49 funds),

[10] In the analysis of Section III, we use the following rules to identify the nationality of funds domiciled in Luxemburg and the four offshore jurisdictions: based on the countries of origin of their fund management companies, we assign 41 out of the 55 funds domiciled in Luxemburg to: Switzerland (11 funds), Germany (10), UK (6), France (4), Netherlands (4), Belgium (3), Sweden (2), and Austria (1). Funds domiciled in Guernsey and Isle of Man are assigned to the UK group; funds domiciled in Cayman Islands and Netherlands Antilles are considered a separate group. Identifying a fund's nationality is necessary when ranking a fund relative to other funds in the same country. The construction of most of the indicator variables in Section III, including *D(Young), D(High Costs), D(Top Performer Family), D(Market Leader Family), D(Persistent Winner), D(Persistent Loser)* and *D(Loser to Winner),* and the *Rank Quintiles* variables, involves the above process.

and Australia (36 funds). The SRI fund industry of the UK and the US is the most mature as reflected by the median age of about 7 years, whereas the industry in Europe (excluding the UK) and the Rest of the World is young with a median age of about 3 years since the fund's inception. Furthermore, the US and UK SRI funds are much larger than those in Europe and the Rest of the World. While the average size of SRI funds in the US is € 142 million, in Europe (excluding the UK) the average size is € 32 million. In terms of total assets under management, the US has the largest SRI mutual equity funds industry, which manages assets of € 13.2 billion. By contrast, the total assets managed by SRI funds in all the other countries amount to € 13.0 billion. Finally, Panel B of Table 2 shows that, the reference group of non-SRI funds in the UK is much older and larger, with a median age of 10 years and an average size of € 270 million per fund. While an SRI fund family manages on average 2 SRI equity funds, the average number of non-SRI equity funds per family in the UK is 5 funds.

As the S&P's Fund Service does not maintain data on funds that cease to exist, we investigate whether or not our sample of SRI funds suffers from survivorship bias. While most papers of the SRI literature report that there is no fund attrition[11], we learnt from discussions with several industry experts and fund managers that over our sample period eight socially responsible equity mutual funds[12] ceased to exist. Given the very low attrition rate (on average 0.25% on an annual basis), it is unlikely that survivorship bias will affect our results. Moreover, the flow-performance relation of conventional funds is not sensitive to fund attrition either. Chevalier and Ellison (1997), Goetzmann and Peles (1997) and Sirri and Tufano (1998) perform their analyses on a survivorship-bias free sample and find no difference in results for samples not corrected for fund attrition.

B. Summary Statistics

[11] Statman (2000) reports that none of the socially responsible mutual funds in the US have disappeared in the sample period of 1990-1998. Schroder (2004) documents that no SRI funds have been closed in the US, Germany and Switzerland for the sample period of 1990-2002. Similarly, Geczy, Stambaugh and Levin (2003), Bauer, Koedijk and Otten (2005) and Bollen and Cohen (2005) also do not report on the existence of dead SRI funds in the US, UK and Germany for their sample periods, although they do capture the attrition of conventional mutual funds when creating a reference group.

[12] The eight 'dead' equity SRI funds are: 'Cruelty Free Value Fund', 'Friends Ivory European Social Awareness Fund', 'Neuberger Berman Socially Responsive Assets Fund', 'North American Funds: Socially Responsible', 'NPI Social Index Tracker Fund', 'Rightime Fund: Social Awareness Fund', 'Stratton Special Value Fund', and 'Victory Funds: LakeFront Fund'. We collect data for these funds from a number of sources including CRSP Survivor-Bias Free Mutual Fund Database and Datastream 'dead' mutual funds research files. Including data of the dead funds into analysis doesn't affect our results (both the coefficient estimates and significance levels).

Fund flows are defined as the net change in fund assets beyond reinvested dividends. As in Sirri and Tufano (1998), we compute money-flows of fund *i* during month *t* as:

$$Flow_{i,t} = \frac{AUM_{i,t} - AUM_{i,t-1}(1 + Return_{i,t})}{AUM_{i,t-1}} \quad (1)$$

where $AUM_{i,t}$ and $AUM_{i,t-1}$ are the assets under management (in local currency) for fund *i* at the end of month *t* and month *t-1*, $Return_{i,t}$ is the raw return for fund *i* during month *t*, defined as the difference in the natural logarithms of net asset values of fund *i* at the end of month *t* and month *t-1*. The returns are net of annual management fees, inclusive of any distributions and denoted in local currency. This measure of fund flows assumes that all flows occur at the end of month *t*.[13]

Figure 1 shows the number of SRI funds and their total assets under management over time. Our dataset shows that the number of SRI equity funds around the world has grown rapidly to 410 in just one decade, and that the total AUM has augmented from € 1.7 billion in December 1992 to € 26.2 billion by December 2003. Europe (excluding the UK) has experienced the highest growth in the number of SRI funds, while the country with the fastest growth in SRI assets in equity mutual funds is the US. In order to have an impression of the relation between past performance and money-flows, we depict in Figure 2 the average annual flows against the prior-year's average annual returns. Although the average return of SRI funds around the world was strongly negative in 2001 and 2002, i.e. –16% and –21% respectively, the SRI fund industry still experienced a strong inflow of new money of 41% and 38% in these two years. Figure 2 also suggests that, although in almost all years the average flows are positive, they seem to depend on the recent returns of SRI funds for all four regions.

[Insert Figures 1 and 2 and Table 3 about here]

Table 3 presents the summary statistics over the sample period 1992–2003. Panel A of Table 3 reports the average and standard deviation of money-flows, the returns, the flow volatility (measured in 12-month rolling windows), the risk (the standard deviation of returns in 12-month rolling windows), the fund size (the natural logarithm of fund assets in €), the total fees (the sum of

[13] To reduce the effect of outliers, we remove the observations of fund flows beyond the 99.5th percentile or below the 0.5th percentile. This is similar to other studies of fund flows such as Barber, Odean and Zheng (2005) and Bollen and Cohen (2005).

the annual management fee and one seventh of the load fees[14]), the number of funds per fund family, the fraction of funds investing in particular geographical areas, and the number of SRI screens used per fund. The statistics are computed over time and across funds. Panel A shows that the SRI industry has experienced a strong growth all over the world with the average monthly growth rate ranging from 2.7% in the UK to 3.6% in the US. The average fund size is the largest in the UK. Furthermore, the average annual total fees range from 1.7% in Europe (excluding the UK) to 2.1% in the Rest of the World. There are important differences in the components of fund fees across regions: SRI funds in the US have the highest average management fee of 1.6% per year and the lowest load fees (defined as the sum of front- and back-end fees), namely 1.8%. The load fees are the highest in the Rest of the World, on average 4%. European SRI funds are the most internationally diversified ones: 33% of the funds invest across Europe, 61% invest around the world and only 6% invest in the domestic country. In contrast, only 16% of the SRI funds in the US invest overseas. Finally, Panel B shows that our benchmark non-SRI funds in the UK have experienced 1.9% less money-inflows per month than the SRI funds, in spite of the fact that the average monthly return of non-SRI funds is 0.5% higher. This suggests that the strong growth of the SRI industry is not merely driven by returns, and that non-financial investment attributes may play an important role in attracting investors.

Panel C highlights the differences in screening activity across the four regions. In the UK SRI funds employ on average about 9.5 investment screens simultaneously, 6 of which are so-called negative screens which exclude firms or industries with undesirable ethical characteristics. In contrast, SRI funds in the Rest of the World apply on average 5.5 screens. Negative screens are employed by more than 97% of SRI funds in the US. In particular, 93% of US SRI funds use at least one of the Sin screens, including tobacco, alcohol, gambling, weapons and pornography. In contrast, social and environmental screens are more popular in the UK and the rest of Europe (used by 87% and 92% of the funds, respectively). It should be noted that Islamic funds account for 36% of SRI funds in the Rest of the World, which includes Asia-Pacific and Africa. Interestingly, 47% of the US SRI funds report that they make active use of their shareholder voting rights, while in Europe (excluding the UK) only 18% of the funds are involved in shareholder activism. Finally, 55% of the US SRI funds base their SRI screening activities on in-house research, compared to only 11% of SRI funds in the Rest of the World.

[14] Load fees include front-end fees (share subscription fees) and back-end fees (share redemption fees). We amortized loads fees over a seven-year holding period, which is the average holding period for equity mutual funds. While load fees are mainly used to pay for trading costs and marketing expenses (e.g. distribution payments to brokers or advertising), management fees are used to cover operating expenses including managerial compensation as well as part of the marketing expenses (called the 12B1 fee in the US). Like Sirri and Tufano (1998), Total Fees captures the total fees charged to investors.

III. The Determinants of Money-Flows

A. Flows and Past Performance

Although prior research on mutual fund performance reports little evidence of outperformance by conventional funds and of persistence in performance (see, e.g. Carhart, 1997), there is strong evidence that investors chase funds with high historical performance. As stated by Sirri and Tufano (1998), individual investors tend to use rudimentary performance measures like raw historical returns to select mutual funds. Berk and Green (2004) state that considering past performance may be justified provided that fund managers possess differential stock-picking abilities. For these reasons, we include past performance in our model explaining the funds' money-flows. Investors may also consider other factors in addition to past performance: fund size and age, its return volatility, the fee structure, past money-flows and the reputation of the fund family. All this information is readily available to investors through newspapers, websites and specialized data providers, such as Morningstar or S&P. In addition, investors of SRI funds may value the use of screens used by SRI funds. Some investors may particularly care about pure ethical issues such as animal tests or genetic engineering, whereas others may give priority to social responsibility or good corporate governance.

Therefore, we examine the determinants of SRI fund flows around the world and of our benchmark funds (the conventional (non-SRI) UK mutual equity funds), by estimating the following regression:

$$Flow_{i,t} = \beta_0 + \beta_1 \, Average\ Return_{i,[t-1,t-12]} + \beta_2 \, Average\ Return_{i,[t-1,t-12]} * D(Negative\ Return_{i,[t-1,t-12]}) + \beta_3 \, Average\ Return_{i,[t-13,t-24]} + \beta_4 \, Average\ Return_{i,[t-13,t-24]} * D(Negative\ Return_{i,[t-13,t-24]}) + \gamma \, Control\ Variables_{i,t-1} + u_{i,t} \quad (2)$$

where $Flow_{i,t}$ is the money-flow of fund i in month t, $Average\ Return_{i,[t-1,t-12]}$ and $Average\ Return_{i,[t-13,t-24]}$ are the average returns of fund i over the months $t-1$ to $t-12$ and $t-13$ to $t-24$, $D(Negative\ Return_{i,[t-1,t-12]})$ and $D(Negative\ Return_{i,[t-13,t-24]})$ are indicator variables that are equal to one if $Average\ Return_{i,[t-1,t-12]}$ and $Average\ Return_{i,[t-13,t-24]}$ are negative, respectively. [15]

[15] We also used Jensen's alpha as a performance measure. Tables are available upon request. The results are similar to the ones reported in Table 4.

The reason why we include an indicator variable *D(Negative Return)* in Equation (2) is to allow for different flow-return sensitivities subsequent to positive or negative returns. The coefficients in Equation (2) can now be interpreted as follows: β_1 captures the sensitivity of flows to positive average returns in the previous year, $(\beta_1+\beta_2)$ expresses the sensitivity of flows to negative average returns in the previous year. Likewise, β_3 stands for the sensitivity of flows to positive average returns in year –2, while $(\beta_3+\beta_4)$ captures the sensitivity of flows to negative average returns in year –2. The t-statistics are calculated using White standard errors to account for heterogeneity.[16]

The vector of control variables in Equation (2), denoted as $Control\ Variables_{i,t-1}$, captures the impact of seven groups of variables: Fund Characteristics, Past Flows, Fund Family, International Diversification, Screening Activity, Geographical Location and Time Effect. The Fund Characteristics consist of: (i) $Size_{i,t-1}$, the size of the fund (the natural logarithm of AUM in €) at month *t-1*, (ii) $Risk_{i,[t-1,t-12]}$, the total risk of the fund measured as the standard deviation of monthly fund returns from months *t-1* to *t-12*, (iii) $Age_{i,t-1}$, (the number of years since its inception), (iv) $Age_{i,t-1}$* $D(Young_{i,t-1})$, a term interacting the age with an indicator variable equalling one if the funds' age is below the median of all SRI funds (or conventional ones – depending on the regression) in its domicile for month *t-1*, (v) $Total\ Fees_i$, defined as the sum of the annual management fee and one seventh of the sum of the front- and the back-end load fees, (vi) $Total\ Fees_i$ *$D(High\ Fees_i)$, a term interacting the total fees with an indicator variable equalling one if the funds' total fees are above the median total fees of all SRI funds (or conventional ones) in its domicile. Moreover, we include the past flows, $Flow_{i,t-1}$ (the money-flows of the fund in month *t-1*), as a control variable.

Subsequently, we use three variables to proxy for the reputation of fund families in the SRI or conventional fund industries: (i) $D(Top\ Performer\ Family_{i,t-1})$, an indicator variable equalling one if the raw return of at least one SRI (or conventional) fund in the funds' family belongs to the top 20% of all SRI or conventional funds in its domicile at month *t-1*, (ii) $Number\ of\ Funds\ in\ Family_{i,\ t-1}$, the number of SRI (or conventional) funds managed by the funds' family at month *t-1*, (iii) $D\ (Market\ Leader\ Family_{i,t-1})$, an indicator variable equalling one if the funds' family has the highest market share of SRI (or conventional) assets among all fund families in its domicile at *t-1*.

Furthermore, the International Diversification variables include two mutually exclusive indicators, denoted as $D(European\ Diversification_i)$ and $D(Global\ Diversification_i)$, which equal one

[16] When estimating an equation similar to Equation (2) for mutual funds, Sirri and Tufano (1998) recommend the use of the Fama and MacBeth (FM) procedure, which estimates a cross-sectional regression for each month and allows for potential cross-sectional dependence between fund observations. However, in our case the FM procedure would produce inaccurate estimates, because our sample of SRI funds is an unbalanced panel and there are few funds in the early months of our sample period. Our approach of using OLS estimates and White standard errors is consistent with that of Del Guercio and Tkac (2002). When we apply the FM procedure on a subsample including only the monthly data of the last 5 years of our sample, we obtain similar results.

if the fund invests across Europe or Globally, respectively. The reference group is the funds investing in their domestic countries.

For the SRI funds, the Screening Activity comprises the following variables: (i) *Number of Screens*$_i$ is the number of SRI screens (listed in Table 1) used by a fund, (ii) *D(Sin Screens*$_i$*), D(Ethical Screens*$_i$*), D(Social Screens*$_i$*)* and *D(Environmental Screens*$_i$*)* are four indicator variables which equal one if the fund uses at least one of the SRI screens from a broad screening area, i.e. sin, ethical, social or environmental screens, respectively[17], (iii) *D(Islamic Fund*$_i$*)* is an indicator variable capturing whether the fund is designed for Islamic investors, (iv) *D(Activism Policy*$_i$*)* is an indicator variable which equals one if the fund intends to influence corporate behaviour through direct engagement or proxy voting, (v) *D(In-House SRI Research*$_i$*)* is an indicator variable which equals one if the screening activities of the fund are based on in-house SRI research.

In order to capture differences in the money-flows across geographical locations, we include mutually exclusive indicator variables based on the domicile of the fund, denoted as *D(Europe*$_i$ *ex. UK), D(US*$_i$*)* and *D(Rest of World*$_i$*)*. The SRI funds in the UK are the reference group. Finally, we also include fixed time effects to control for the bubble and recession periods, i.e. nine year dummies and eleven month dummies, denoted as *D(Year*$_{i,t}$*)* and *D(Month*$_{i,t}$*)*.[18]

In Panel A of Table 4 we present the estimation results of Equation (2) for the SRI funds, while we show the results for the benchmark mutual funds in Panel B. We find that the money-flows of SRI funds are more sensitive to past returns when these returns are positive than when they are negative. In particular, the money-flows of SRI funds increase 0.95% per month for a 1% increase in the previous year's average monthly returns, provided that the return is positive. In case of negative average returns, the corresponding money-flows decrease by a modest 0.20% for a 1% decrease in return. This result corresponds to the one by Bollen and Cohen (2005) who also document that the flow-return sensitivity for US SRI funds is stronger for positive past returns than for negative ones. Moreover, we also report that the money-flows are sensitive to the returns of both the previous two years. For instance, when the first and second return lags are positive, a 1% difference in average monthly returns in both these years is associated with a 1.55% difference per month in money-flows. Thus, it appears that ethical money chases past returns, moving disproportionately more to SRI funds that performed very well in the past. The flow-performance relationship is weaker when past performance is poor.

[Insert Table 4 about here]

[17] These four indicator variables are not mutually exclusive. All of them may equal one in case that a fund employs screens from the four main screening categories.

[18] The estimation results of these time indicator variables are not reported in the paper; they are available upon request.

The convex relation between flow and past performance, in combination with the compensation structure in the mutual fund industry where management fees depend on fund size, gives fund companies a payout that resembles a call option (Sirri and Tufano, 1998). Fund managers have incentives to increase the volatility of fund returns in order to maximize the value of this call option (Chevalier and Ellison, 1997). In the conventional mutual fund industry, the risk of the fund generally has a negative impact on money-flows (see, e.g., Sirri and Tufano, 1998; Barber, Odean and Zheng, 2005). Surprisingly, ethical money is not sensitive to the past risk of investments, i.e. higher fund return volatility does not reduce the money-flows into SRI funds. This fact may influence the risk-taking incentives of SRI fund managers.

The money-flows of SRI funds are also influenced by the other fund characteristics. As new SRI funds may be more innovative and exert more marketing efforts than existing funds, younger SRI funds may attract more flows than older funds. In addition, smaller funds may attract a larger percentage of inflows. Consistent with studies on money-flows of conventional mutual funds (see, Sirri and Tufano, 1998, and Barber, Odean and Zheng, 2005), we find that smaller and younger SRI funds attract more inflows than bigger and older funds. Using a subsample of US SRI funds as these funds report data on marketing expenses (the '12B1 fees'), we find that funds with higher marketing expenses attract more flows. The impact of marketing expenses on money-inflows is indeed stronger for younger SRI funds.[19] Our results are consistent with those of Barber, Odean and Zheng (2005) for conventional US funds and may also explain why older funds (which spend less on marketing) attract fewer flows.

A striking finding is that increases in the total fees to SRI investors do not reduce the money-flows. When the total fees are above the country median in its domicile country, the flows are 0.1% lower (though not statistically significant based on a Wald test) for a 1% increase in fees. This is in contrast to the findings for conventional mutual funds where high fees significantly reduce flows (see, Sirri and Tufano, 1998, and Barber, Odean and Zheng, 2005). Our results indicate that SRI investors pay less attention to fund fees than conventional investors, which implies that SRI investors are willing to pay for holding assets consistent with their social objectives. The insignificant impact of costs on flows may incentivize fund families to enter into the SRI niche market. As argued by Massa (2003) and Khorana and Servaes (2004), price competition is lower for more differentiated funds. Thus, given that SRI investors care less about fees, fund managers have

[19] Tables are available upon request.

incentives to follow costly marketing strategies in order to attract investors and hence enhance management fees.

Panel A of Table 4 also documents that SRI investors do not chase past flows. This does not come as a surprise as information on past money-flows (in contrast to information on past performance) is not readily available to most retail investors.

Most SRI funds are members of fund families. For example, 'Calvert' is the largest SRI fund family in the US, which manages more than 10 SRI funds. As suggested by Sirri and Tufano (1998) and Nanda, Wang and Zheng (2004), stellar performance of a mutual fund may generate money-flows for other funds in its family. However, we do not find such a spillover effect in the SRI fund industry. It is common that fund families offer investors the option of switching to other funds belonging to the same family at low cost. Thus, the higher the number of funds in the family, the greater the value of this option (Massa, 2003). We find that the total number of SRI funds in the family has a significant positive impact on the money-flows: a one-standard deviation increase in the number of funds (i.e. 4.2 funds) is associated with 0.3% higher money-flows per month. We also find that market leadership in the SRI industry (as a proxy for family reputation) has no impact on the money-flows. Table 4 (Panel A) also shows that money-flows of SRI funds are not significantly affected by whether or not the funds invest abroad.

Interestingly, we find that the number of SRI screens used affects the money-flows in a significantly positive way, even after controlling for the type of screens. Suppose that a fund employs 10 SRI screens based on social and environmental criteria, whereas a second fund uses only one social screen and one environmental screen (i.e. the difference in the number of screens between the funds is about two-standard deviations). The fund with more screens attracts about 1% higher money-flows per month. However, some screens, namely ethical and environmental screens, seem less attractive relative to other SRI screens. For instance, a fund that uses ethical criteria, such as animal testing, anti-abortion, or Islamic screens, receives 1% less money per month compared to funds not using such screens, and a fund using environmental screens attract 0.9% less money per month.[20] Funds engaging in shareholder activism receive 0.5% less flows per month (significant at the 6% level). Moreover, stock picking based on in-house SRI research has little impact on the money-flows. This implies that SRI funds have few incentives to influence company behavior via activism or to conduct SRI research themselves.

[20] We also investigate whether employing more SRI screens is associated with higher fees. We find that larger funds and funds with more screens charge lower total fees to investors, whereas funds employing sin screens, environmental screens, or Islamic screens charge higher fees than funds without these screens. Contrary to our expectations, funds engaging in shareholder activism or conducting SRI research in-house do not charge higher fees. The tables are available upon request.

Finally, the negative coefficients for the regional dummies indicate that, after controlling for performance and non-financial attributes, SRI funds in the UK attract significantly more money than their counterparts in the other European countries, the US and the Rest of the World. The strong growth of SRI industry in the UK may be partially attributed to the regulation regarding SRI, as discussed above.

When we compare the results of Panel A of Table 4 with the determinants of money-flows of conventional UK mutual funds (reported in Panel B), some striking differences emerge. First, past average returns matter for conventional funds, but their impact on money-flows is smaller in magnitude. Specifically, the money-flows of conventional funds increase 0.78% per month for a 1% increase in the average monthly return over the prior year when this return is positive. In case of a negative return over the previous year, the money-flows increase by only 0.31%. Consistent with Bollen and Cohen (2005), we find that money-flows of SRI funds are more sensitive to lagged positive returns than flows in conventional funds, but less sensitive to lagged negative returns. Second, in contrast to SRI funds, the total fees of conventional funds have a negative affect on the money-flows. The annual money-flows of conventional funds are 10.8% lower for a 1% increase in total fees when the fees are above the country median in its domicile country, while they are 6.8% lower in case the fees are above the country median (see Panel A of the Appendix for a summary of the economic effects in Tables 4-6). Our results suggest that ethical money is less sensitive to the fund fees than money invested in conventional mutual equity funds. Furthermore, while past flows do not significantly affect ethical money-flows, conventional funds' investors invest significantly less in funds with high inflows over the previous year. Third, we find a 'spillover' effect for conventional UK funds: having a star performer in the fund family increase flows by 0.3% per month. Furthermore, family reputation matters. The conventional funds of whom the fund family is a market leader attract 0.6% more money-flows per month (marginally significant at the 10% level). Finally, while international diversification does not influence the money-flows of SRI funds, it has a significant negative impact on the money-flows of conventional UK funds.

B. Flows and Past Relative Performance

Barberis and Shleifer (2003) argue that investors categorize risky assets into different broad classes such as value stocks and growth stocks, and allocate money to these asset classes rather than to individual securities. Hence, investors may regard SRI funds as a separate category of mutual funds and evaluate the performance of an SRI fund relative to that of other SRI funds in their country. In addition, investors often use return rankings published in newspapers and financial

magazines to select mutual funds (Sirri and Tufano, 1998). Therefore, we repeat the analysis in Section A with alternative performance measures: we classify a fund's monthly returns into five performance quintiles relative to the returns of all other SRI funds in the fund's domicile.

In order to examine whether relative performance affects the money-flows for SRI mutual funds around the world as well as of conventional (non-SRI) UK mutual funds, we estimate the following regression:

$$Flow_{i,t} = \beta_0 + \beta_1 \, Rank\ Bottom\ Quintile_{i,[t-1,t-12]} + \beta_2 \, Rank\ Middle\ Quintile_{i,[t-1,t-12]} + \beta_3 \, Rank\ Top\ Quintile_{i,[t-1,t-12]} + \beta_4 Rank\ Bottom\ Quintile_{i,[t-13,t-24]} + \beta_5 \, Rank\ Middle\ Quintile_{i,[t-13,t-24]} + \beta_6 \, Rank\ Top\ Quintile_{i,[t-13,t-24]} + \gamma \, Control\ Variables_{i,t-1} + u_{i,t} \quad (3)$$

where *Rank Bottom Quintile, Rank Middle Quintile* and *Rank Top Quintile* are the fractional rank quintiles, constructed as follows. First, for each month *t*, the average returns over month *t-1* to month *t-12* (Average $\text{Return}_{i,[t-1,t-12]}$) are ranked relative to all funds in the domicile, and each fund is assigned a fractional rank ($Rank_{i,[t-1,t-12]}$) ranging from 0 (the poorest performance in the domicile) through 1 (the best performance in the domicile). For instance, a Rank of 0.7 implies that the fund is better than 70% of all SRI funds in the domicile based on the previous year's return. Subsequently, the bottom quintile of fractional rank ($Rank\ Bottom\ Quintile_{i,[t-1,t-12]}$) is defined as Min (0.2, $\text{Rank}_{i,t-1}$), the middle three fractional rank quintiles are combined into one ($Rank\ Middle\ Quintile_{i,[t-1,t-12]}$) defined as Min (0.6, $\text{Rank}_{i,[t-1,t-12]}$ - Rank Bottom $\text{Quintile}_{i,[t-1,t-12]}$), and the top quintile of fractional rank ($Rank\ Top\ Quintile_{i,[t-1,t-12]}$) is defined as Min (0.2, $\text{Rank}_{i,[t-1,t-12]}$ - Rank Bottom $\text{Quintile}_{i,[t-1,t-12]}$ - Rank Middle $\text{Quintile}_{i,[t-1,t-12]}$). Similarly, $Rank\ Bottom\ Quintile_{i,[t-13,t-24]}$, $Rank\ Middle\ Quintile_{i,[t-13,t-24]}$, and $Rank\ Top\ Quintile_{i,[t-13,t-24]}$ are defined on the basis of the ranking of average returns over month *t-13* to month *t-24* (Average $\text{Return}_{i,[t-13,t-24]}$). As in Equation (2), the vector $Control\ Variables_{i,t-1}$ is included in order to examine whether other factors in addition to past relative performance affect the decision to invest in an SRI fund or a conventional one. In Panel A of Table 5 we present the estimation results of Equation (3) for the SRI funds, while in Panel B we present the results for the conventional UK mutual funds.

[Insert Table 5 about here]

Panel A of Table 5 shows that relative past performance matters and that outstanding relative performance matters proportionally more. If an SRI fund is ranked in the top-quintile among the SRI funds in its country, the fund can expect about 1.1% more flows per month for every 10-percentile improvement in performance ranking (say from the 85th to the 95th percentile). Only 0.2% extra

money per month can be expected if the fund is ranked in the middle quintiles in the previous year (i.e. for an improvement in performance ranking from the 45th to the 55th percentile). An overview of the economic significance is given in Panel A of the Appendix. The insignificant coefficient on the bottom quintile indicates that money-flows into or out of the bottom 20% of SRI funds are not sensitive to poor past performance. Furthermore, if an SRI fund was consistently in the top-quintile during the previous two years, the fund can expect about 1.7% more inflows per month. Our results are of similar economic magnitude as those reported by Sirri and Tufano (1998) and Agarwal, Daniel and Naik (2004) for conventional mutual funds and hedge funds, respectively. Moreover, the relations between fund characteristics and the money-flows into and out of SRI mutual funds are in line with those presented in Panel A of Table 4.

For non-SRI UK funds, we find that strong relative performance significantly affects the money-flows to the funds. A consistent top performer during the previous two years can expect about 1.3% more flows per month for every 10-percentile improvement in performance ranking.

C. Flows and Persistence in Past Performance

In addition to past returns and rankings, trends in past performance may also influence investor behavior. Barberis, Shleifer and Vishny (1998) develop a model of investor sentiment where investors hold the belief that the return process switches between a 'continuation' regime (in which asset returns are persistent) and a 'reversal' regime (in which asset returns tend to reverse in sign). Investors observe the trends and patterns in past performance to determine which regime currently regulates performance, and make their investment decisions accordingly. Therefore, we examine whether investors pay attention to persistence in past performance of SRI funds and direct more money to the funds of a persistently winning regime.

An SRI fund is considered as a persistent winner (loser) if its return is higher (lower) than the return of the median fund in the domicile over the previous two years (see e.g. Brown, Goetzmann and Ibbotson, 1999 and Agarwal, Daniel and Naik, 2004). To investigate how investors react to information on winners and losers, we estimate the following regression:

$$Flow_{i,t} = \beta_0 + \beta_1 D(Persistent\ Winner_{i,\,[t-1,t-24]}) + \beta_2 D(Persistent\ Loser_{i,\,[t-1,t-24]}) + \beta_3 D(Loser\ to\ Winner_{i,\,[t-1,t-24]}) + \gamma\ Control\ Variables_{i,t-1} + u_{i,t} \quad (4)$$

We label a fund as a winner when the indicator variable $D(Winner_{i,[t-1,t-12]})$ equals one; this is the case when the average return for fund *i* over month *t-1* to month *t-12* (Average Return $_{i,[t-1,t-12]}$) is

higher than the average return over the same period of the median fund in its domicile (see Section II for our definition of funds' nationality)[21]. Likewise, $D(Persistent\ Winner_{i,\ [t-1,t-24]})$ is an indicator variable capturing that a fund is a persistent winner. This dummy equals one if fund *i* is a winner over both the periods *t-1* to *t-12* and *t-13* to *t-24* (i.e. $D(Winner_{i,[t-1,t-12]}) = 1$ and $D(Winner_{i,[t-13,t-24]}) = 1$) and is zero otherwise. $D(Persistent\ Loser_{i,\ [t-1,t-24]})$ is an indicator variable that reflects that a fund is a persistent loser: it equals one if fund *i* is not a winner for both the above periods (i.e. $D(Winner_{i,[t-1,t-12]}) = 0$ and $D(Winner_{i,[t-13,t-24]}) = 0$) and is zero otherwise. Finally, $D(Loser\ to\ Winner_{i,\ [t-1,t-24]})$ is an indicator variable that equals one if fund *i* is a winner over the same periods (i.e. $D(Winner_{i,[t-1,t-12]}) = 1$ and $D(Winner_{i,[t-13,t-24]}) = 0$) and is zero otherwise. The vector of $Control\ Variables_{i,t-1}$ is defined as in Equations (2) and (3). The specification of Equation (4) allows us to estimate the difference in money-flows between the following four categories of SRI funds: (i) persistent winners; (ii) persistent losers; (iii) losers in year Y–2 turning into winners in year Y–1; and (iv) winners in year Y–2 turning to losers in year Y–1. The coefficients in Equation (4) can be interpreted as follows: β_1 is the difference in money-flows between persistent winners and funds reversing from winner to loser, β_2 captures the difference between persistent losers and funds reversing from winner to loser, and β_3 measures the difference in flows between funds reversing from loser to winner and those reversing from winner to loser.

[Insert Table 6 about here]

Panel A of Table 6 presents the estimation results of Equation (4) for the SRI funds, while Panel B shows those for our benchmark of conventional UK mutual funds. We find that persistence in fund returns has a significant impact on money-flows. SRI funds that are persistent winners can expect money-flows that are about 0.8% higher on a monthly basis (or about 10% annually) than funds reversing from winner to loser. More importantly, persistent losers experience significantly more outflows of money, i.e. about 1.6% on a monthly basis (19.2% annually) than funds reversing from winner to loser. Thus, funds that are persistent winners receive about 30% more money-flows than persistent losers. Consistent with Barberis, Shleifer and Vishny (1998), our results suggest that investors direct more flows to funds that are believed to be in a positive 'continuation' regime than 'reversal' funds. Interestingly, the coefficient for the 'in house' dummy indicates that SRI funds which rely on SRI research performed by an 'in house' team can expect about 0.43% higher monthly

[21] Note that Loser to Winner has correlation coefficients of 0.59 and –0.56 with Persistent Winner and Persistent Loser, respectively. To avoid the problem of multicollinearity, we also exclude Loser to Winner from Equation (4) and find that the coefficients on Persistent Winner and Persistent Loser remain statistically significant.

inflows (significant at the 6% level), ceteris paribus. All other estimates of the coefficients for the control variables are in line with the specifications of above subsections.

For conventional funds, we find similar results (see Panel B), although persistent conventional losers are less affected than persistent SRI losers. For persistent winners the effect is stronger than in case of SRI funds. Persistent winners can expect about 1.1% higher monthly inflows than the reversal conventional funds.

The results from Table 4, 5 and 6 show that, similar to conventional investors, SRI investors chase past returns, return rankings and persistence in performance. SRI investors are less sensitive to negative returns than positive returns unless poor performance persists. One of the most important differences between SRI funds and conventional funds is the impact of fund fees on the money-flows. In contrast to conventional funds' investors, ethical investors are not so sensitive to magnitude of the fees (management fees and load fees). This fact may incentivize fund families to enter into the SRI niche market. In addition, the fact that ethical money is not sensitive to risk may influence the risk-taking incentives of SRI fund managers.

IV. Money-Flow Volatility

High volatility of money-flows is a burden for fund managers, because they have to buy or sell the shares of their portfolios following the net purchases or sales of shares in the funds. Such liquidity-motivated trading increases the trading costs and may thus depress fund performance (Edelen, 1999). High volatility of money-flows may also be a burden for long-term investors. Goetzmann, Ivkovich and Rouwenhorst (2001) show that speculators adopt market-timing strategies by trading mutual funds at high frequency (e.g. on a daily basis) in order to exploit the valuation errors of funds' daily share prices related to underlying security prices. They show that such trades may be at the expense of long-term investors. Furthermore, to the extent that high volatility of money-flows results from the presence of myopic investors who reallocate their assets frequently, flow volatility is a proxy for the investment horizons of investors whereby high volatility proxies for shorter time horizons (Massa, 2003). Therefore, both fund managers and investors prefer less volatile flows.

Bollen and Cohen (2005) document that US SRI fund flows are less volatile than conventional fund flows. We extend this line of research by relating flow volatility to past performance and various fund characteristics and estimate the following equation:

$$Flow\ Volatility_{i,[t,t-11]} = \beta_0 + \beta_1\ Average\ Return_{i,[t-12,t-23]} + \beta_2\ Average\ Return_{i,[t-12,t-23]} * D(Negative\ Return_{i,[t-12,t-23]}) + \gamma\ Control\ Variables_{i,t-12} + u_{i,t} \quad (5)$$

where $Flow\ Volatility_{i,[t,t-11]}$ is the standard deviation of monthly money-flows of fund *i* over months *t* to *t-11*. The returns and the control variables are defined in Equation (2), with $Flow_{i,t-12}$ replaced by $Average\ Flow_{i,[t-12,t-23]}$. The coefficients in Equation (5) can be interpreted as follows: β_1 measures the sensitivity of flow volatilities to positive average returns of the previous year, and $\beta_1+\beta_2$ measures the sensitivity of flow volatilities to negative average returns of the previous year. Panel A of Table 7 presents the estimation results of Equation (5) for the SRI funds, while Panel B reports the ones for our benchmark of conventional UK funds.

[Insert Table 7 about here]

From Panel A, we learn that positive returns over the previous year lead to higher flows volatility: monthly flow volatility is 0.8% higher for a 1% increase in returns. This is in line with the fact that investors flock to SRI funds when returns are high but attach less importance to negative returns unless poor performance persists. However, we find that this is not entirely true for the conventional funds in Panel B: monthly flow volatility is 0.4% higher for a 1% *increase* in returns when past returns are positive; but flow volatility goes up 0.4% for a 1% *decrease* in returns when past returns are negative (see Panel B of the Appendix for a summary of the economic effects of Table 7).

Chevalier and Ellison (1997) show that money-flows of young funds are more sensitive to past returns than those of old funds. We expect therefore that younger funds have a higher flow volatility. Likewise, smaller funds may have a higher standard deviation of flows. Furthermore, the volatility of fund returns may attract myopic investors and increase flow volatility. In line with our expectations, we find that smaller, younger or riskier SRI funds are associated with higher flow volatility. Fund fees, especially load fees, increase the transaction costs for SRI investors who want to invest or transfer money across funds frequently, such that the money-flow volatility is expected to be lower for the more expensive funds (Massa, 2003). We find that this is indeed the case for the SRI funds: an increase of 1% in total fees moves down the flow volatility by 0.3%. In contrast, the volatility of the most expensive conventional funds is higher (Panel B of Table 7). We also find that SRI funds with higher past flows have more volatile flows.

As discussed above, fund families usually offer investors the option to switch to funds belonging to the same family at low cost. Due to the reduced transaction fees of reallocating assets across funds, myopic investors may prefer mutual funds belonging to a big family. Indeed, we find

that the total number of SRI funds in the family has a significant positive impact on flow volatilities, implying that larger families attract less stable flows. Furthermore, monthly flow volatility is 0.4% higher for SRI funds belonging families with top performers, and 0.9% higher for families occupying a leading position in the domestic SRI market. Global diversification strategies by SRI funds attract investors with a longer investment horizon. Panel B shows that the impact of fund family characteristics on flow volatilities is twice as high for conventional funds. This shows that conventional fund investors attach more importance to fund family characteristics, such as whether or not having a top performer, number of funds and market leaderships, than SRI investors.

It appears that SRI screens have a strong impact on the flow volatility of the SRI funds. A one standard deviation increase in the number of screens (i.e. 4 screens) moves up flow volatility by 0.7% per month. The monthly flow volatility of funds applying ethical or environmental screens is lower by 1.4% and 0.8%, respectively, compared to other types of SRI funds. Most interestingly, shareholder activism and in-house SRI research attract more stable investors to the fund: the monthly flow volatility is significantly reduced by 1.4% and 0.6%, respectively. These effects are also economically significant given the average flow volatility of 7.9% in our sample. Finally, ethical money in the UK is more volatile that in the rest of Europe and much more volatile than in the US and the Rest of the World.

V. Money-Flows and Future Performance

We have shown in Section III that the money-flows of SRI funds are affected by many factors including past performance and the use of SRI screens. While SRI investors chase past returns, a question of considerable importance is whether SRI funds receiving most of the cash flows perform well in the future. Or put differently, is ethical money financially smart? A number of studies on conventional mutual funds document a 'smart money' effect where money-flows can predict short-term fund performance (Gruber, 1996; Zheng, 1999), while Sapp and Tiwari (2004) show that this effect can be explained by the momentum effect of stock returns. In contrast to the smart money effect, Frazzini and Lamont (2005) document a 'dumb money' effect where individual investors invest their money in mutual funds which own stocks that perform poorly over subsequent years. In their model with rational investors and competitive capital markets, Berk and Green (2004) assume that the mutual fund industry has decreasing returns to scale, i.e. fund returns decrease with fund size and new money-inflows chasing past performance may have a negative impact on future performance. Furthermore, Chen, Hong, Huang and Kubik (2004) confirm that fund size erodes performance due to liquidity and organizational diseconomies, and the relation is more pronounced

for funds investing in small and illiquid stocks. We expect that this effect is even stronger for SRI mutual funds, since SRI screens constrain the investment universe. This limitation may force large funds or funds receiving substantial money-flows to invest part of their money in firms with low risk-adjusted returns. Consequently, large SRI funds may perform worse in the future.

A. Money-flows and Future Returns

We investigate the impact of flows and fund characteristics on future fund returns by estimating the following equation:

$$Return_{i,t} = \beta_0 + \beta_1 Average\ Flow_{i,[t-1,t-12]} + \beta_2 Size_{i,t-1} + \beta_3 Size_{i,t-1} * Average\ Flow_{i,[t-1,t-12]} + \gamma Control\ Variables_{i,t-1} + u_{i,t} \quad (6)$$

where, $Return_{i,t}$ is the raw return of fund i in month t, $Average\ Flow_{i,[t-1,t-12]}$ is the average money-flow of fund i from months $t-1$ to $t-12$, and $Control\ Variables_{i,t-1}$ is a vector of lagged variables of fund characteristics defined similarly as before in Equation (2), but in which we have replaced $Flow_{i,t-1}$ by $Average\ Return_{i,[t-1,t-12]}$. In addition to raw returns, we also use the abnormal returns as a dependent variable.[22]

[Insert Table 8 about here]

We report the estimation results of Equations (6) and (7) for SRI funds in Panel A of Table 8, while Panel B shows those for the conventional UK funds. We find some interesting differences between SRI funds and conventional funds. It appears that past average money-flows have a significant negative impact on future returns of SRI funds. An increase by one standard deviation in past average flows (i.e. 16% per month) to an SRI fund predicts a reduction of the raw returns and abnormal returns by about 20 basis points per month (2.3% annually). For conventional UK funds we find no relation between past average flows and next month's return (see Panel C of the Appendix for a summary of the economic effects of Tables 8-9).

Furthermore, in line with Berk and Green (2004) and Chen, Hong, Huang and Kubik (2004), we find that fund size has a negative impact on future returns of both SRI and conventional funds: all

[22] $Abnormal\ Return_{i,t} = Return_{i,t} - R_{f,t} - \beta_i (R_{m,t} - R_{f,t})$ (7), where $R_{f,t}$ *is* the one-month inter-bank interest rate (offering rate or middle rate) in month t in the country where fund i domiciles, $R_{m,t}$ is the return for MSCI indices (dividend reinvested) in month t in the country where fund i domiciles, and β_i is estimated via the OLS regression, $Return_{i,t} - R_{f,t} = \alpha_i + \beta_i (R_{m,t} - R_{f,t}) + u_{i,t}$, for fund i with at least 12 months history.

else equal, a one standard deviation increase in size (i.e. 2.21) erodes future raw returns as well as abnormal returns by 22 basis points per month (2.6% annually). Both SRI funds and conventional ones are confronted with decreasing returns to scale.

Moreover, risk has a negative impact on SRI fund returns. Adopting an increase in total risk by 2% (equivalent to an increase by one standard deviation) reduces next month's raw return and abnormal return of SRI funds by 16 basis points (1.9% annually) and 22 basis points (2.6% annually), respectively. In contrast, the impact for conventional funds is insignificant. Total fund fees do not significantly affect the returns of SRI funds.

An interesting result is that SRI fund returns (in contrast to those of conventional funds) are to some extent predictable. It appears that average past SRI returns have a significant positive impact on future returns: a 1% higher average past return gives about 7 basis points extra expected return in the next month (0.8% annually), but the momentum is economically small. Furthermore, SRI funds benefiting from the membership of an SRI family that includes top performers can expect an additional return of about 19 basis points per month (2.3% annually) or an additional abnormal return of 28 basis points per month (3.4% annually). Despite the fact that SRI investors allocate more flows to larger families, a standard deviation increase in the number of funds in a family reduces next month's abnormal return by 8 basis points (significant within the 10% level).

Finally, fund returns increase with screening intensity (proxied by the number of SRI screens applied). This supports the hypothesis that SRI criteria help fund managers picking stocks. All else equal, funds with 8 more SRI screens (i.e. a two standard deviation difference) are associated with 38 basis points higher abnormal return per month (4.6% annually). However, funds employing an environmental screen can expect 27 basis points (3.2% annually) lower returns than funds without such a screen. It seems that environmental screens have a large negative impact on performance due to the fact that it seriously limits diversification possibilities.

B. Money-Flows and Persistence in Future Performance

In the previous subsection, we concluded that bigger funds with higher inflows generate lower returns in the near future. In order to examine whether such funds have also a lower probability of persistence in future performance, we estimate the following equations using a probit model:

$$Persistent\ Winner_{i,[t,t-23]} = \beta_0 + \beta_1\ Average\ Flow_{i,[t-24,t-35]} + \gamma Control\ Variables_{i,t-24} + u_{i,t} \qquad (8)$$

$$Persistent\ Loser_{i,[t,t-23]} = \beta_0 + \beta_1\ Average\ Flow_{i,[t-24,t-35]} + \gamma Control\ Variables_{i,t-24} + u_{i,t} \quad (9)$$

where, *Persistent Winner* and *Persistent Loser* are defined as in Equation (4), $Average\ Flow_{i,[t-24,t-35]}$ is defined in Equation (6), and $Control\ Variables_{i,t-24}$ are defined as in Equation (2) however with $Flow_{i,t-1}$ replaced by $Average\ Return_{i,[t-24,t-35]}$.

[Insert Table 9 about here]

The estimation results of the probit specification of persistent winners (Equation 8) are shown in Panels A (SRI funds) and C (conventional funds) of Table 9, while Panel B (SRI funds) and D (conventional funds) report the estimation results for persistent losers (Equation (9)). Our results show that larger funds with high inflows are less likely to be persistent winners: a one standard deviation increase in fund size or in money-flows is associated with a decrease in the probability of being a persistent winner by about 7% and 3%, respectively. The result is also economically significant, given that the unconditional probability of being a persistent winner is 25%.[23] Our findings are in line with Berk and Green (2004) who argue that the absence of persistence in performance in the mutual fund industry is due to decreasing returns to scale caused by investors chasing past performance.

While risk has an insignificant impact on being a persistent winner in the case of SRI funds, we find that high risk decreases the probability of being a persistent winner for conventional funds. Being a persistent winner is also less likely for older funds, funds with higher fees and funds with low past returns, whereas the probability augments when the number of funds belonging to the same fund family is large and when the fund family of the SRI fund is the market leader. In terms of economic significance, an increase by one standard deviation in the number of funds in the family (i.e. 4 funds) is associated with an increase in the probability of being a persistent winner by 7%. This result can by explained by the fact fund families may subsidize the performance of the 'favourite' funds, i.e. who performed well in the past or have high fees, in order to attract money-inflows to those funds (Gaspar, Massa and Matos, 2004). The cross-fund subsidization, such as allocation of underpriced IPO deals and opposite trades across member funds, may generate persistence in performance of funds in bigger or market-leading families. Investing globally has a negative affect on return persistence for both SRI funds and conventional ones. Moreover, the probability of being a persistent winner goes down by 2% when 1 additional SRI screen is employed.

[23] As discussed in Section III.C, we classify funds into four categories depending on the persistence in performance: persistent winners, persistent losers, winners turning into losers, or losers turning into winners.

This is congruent with the hypothesis that SRI screens limit the diversification possibilities and thus increase portfolio risks.

VI. Conclusion

This paper contributes to the growing literature on the behavior of investors in mutual funds. First, we study the behavior of 'ethical' investors, namely of those investing in Socially Responsible Investment funds. This group of investors explicitly cares about non-financial investment screens used in the portfolio selection. Second, we analyze whether SRI screens affect the money-flows in SRI funds in a multivariate framework which also includes the size, age, risk, past returns, degree of diversification, geographical location and the fee structure of these funds as well as the role of the fund family they belong to. Finally, we study the volatility of the money-flows and examine whether money-flows are able to predict future fund performance. We use a comprehensive dataset consisting of nearly all SRI equity funds around the world, as well as of conventional mutual funds from the UK (as a benchmark) over the sample period 1992–2003.

The results suggest that SRI (or 'ethical') investors chase past returns, past return rankings, and persistence in past performance, as do investors in conventional mutual funds. In particular, SRI funds that can be denoted as persistent winners receive about 30% more money inflows than persistent losers. Unless a fund persistently underperforms, SRI investors care more about past positive returns than about past negative returns. We also show that a higher screening intensity attracts more money-inflows than funds employing few screens. The funds that use environmental screens (e.g. restricting investments in firms producing or using non-renewable energy) or ethical screens (e.g. limiting investments in firms using animal testing or producing abortion drugs) attract fewer money-flows. An interesting difference between SRI funds and conventional funds is the effect of fund fees on the money-flows. The results show that the decision to invest in an SRI fund is less affected by management fees and load fees than the decision to invest in conventional funds. This may incentivize fund management companies to enter the SRI market as ethical investors seem to be willing to pay for the management of portfolios consistent with their social objectives.

The variability in the money-flows is a serious concern of mutual fund managers because it can depress fund performance due to the costs of trading the shares of the funds' portfolios which are triggered by the net purchases or sales of shares in the funds. In line with our expectations, we find that smaller, younger or riskier SRI funds have higher money-flow volatility, partly resulting from the higher marketing efforts of these funds. Furthermore, our results indicate that the money-flow volatility is higher for SRI funds that experienced good recent performance, or belong to a larger

fund family or to a family with top performing funds. More specifically, monthly flow volatility is about 0.9% higher for families with a leading position in the domestic market and an additional 0.4% per month higher when the fund family includes a star fund. This may be due to the fact that myopic investors prefer funds belonging to a large family because switching between funds within the family can usually be done at low cost. An interesting result is that shareholder activism and in-house research of an SRI fund significantly lowers the monthly flow volatility by 1.4% and 0.6%, respectively. Apparently, these two attributes attract more stable investors to the fund.

While we show that SRI investors chase past returns, we also examine whether or not SRI investors are able to select (invest their money in) funds that will generate high future performance. One the one hand, the use of SRI screens constrains the investment universe of mutual funds and there is evidence that conventional funds are confronted with decreasing returns to scale (Berk and Green, 2004; Chen, Hong, Huang and Kubik, 2004). On the other hand, active fund management by using (positive) screens may generate superior returns. Our results show that the SRI funds attracting most flows are not generating higher returns: the future abnormal return is 2.3% (annually) lower for SRI funds attracting money-flows exceeding the average flow by one standard deviation. This finding is reinforced by our analysis of the impact of past flows on persistence in (future) returns: we demonstrate that the probability that funds arise as persistent winners is reduced when these funds attract large past money inflows and that the probability of being persistent losers augments for popular SRI funds. We interpret this evidence by the emergence of decreasing returns of scale in fund investments. Thus, it seems that ethical money is not financially smart in the sense that the mutual fund reallocation decisions of SRI investors reduce their wealth. But there is one caveat to this conclusion: we find a positive relation between the use of SRI screens and future performance: the screening intensity of SRI funds improves returns. In particular, an SRI fund with 8 more screens is expected (all else equal) to have a higher abnormal return of 38 basis points per month (i.e. 4.6% annually) than focused SRI funds. Apparently, funds with more SRI screens attracting higher money-inflows, have better returns in the future than funds focusing on one or a few particular investment screen.

Reference:

Agarwal, V., N. Daniel and N. Naik, 2004, Role of managerial incentives, flexibility, and ability: evidence from performance and money flows in hedge funds, Working Paper London Business School.

Barber, B., T. Odean and L. Zheng, 2005, Out of sight, out of minds: the effect of expenses on mutual fund flows, *Journal of Business*, forthcoming.

Barberis, N., A. Shleifer and Vishny, 1998, A model of investor sentiment, *Journal of Financial Economics* 49, 307-343.

Barberis, N., and A. Shleifer, 2003, Style investing, *Journal of Financial Economics* 68, 168-199.

Bauer, R., J. Derwall and R. Otten, 2003, Canadian ethical mutual funds, Working Paper Maastricht University.

Bauer, R., K. Koedijk and R. Otten, 2005, International evidence on ethical mutual fund performance and investment style, *Journal of Banking and Finance* 29, 1751-1767.

Bauer, R., R. Otten and A. Tourani Rad, 2004, Ethical Investing in Australia, is there a financial penalty?, *Pacific-Basin Finance Journal*, forthcoming.

Beal, D. and M. Goyen, 1998, 'Putting your money where your mouth is' A profile of ethical investors, *Financial Services Review* 7(2), 129-143.

Berk, J. and R. Green, 2004, Mutual fund flows and performance in rational markets, *Journal of Political Economy* 112 (6), 1269-1295.

Bollen, N. and M. Cohen, 2005, Mutual fund attributes and investor behavior, Working Paper Vanderbilt University.

Brown, S., W. Goetzmann and R. Ibbotson, 1999, Offshore hedge funds: survival and performance 1989-1995, *Journal of Business* 72, 91-117.

Carhart, M., 1997, On the persistence of mutual fund performance, *Journal of Finance* 52, 57-82.

Chen, J., H. Hong, M. Huang and J. Kubik, 2004, Does fund size erode performance? The role of liquidity and organization, *American Economic Review* 94(5), 1276-1302.

Chevalier, J. and G. Ellison, 1997, Risk taking by mutual funds as a response to incentives, *Journal of Political Economy* 105, 1167-1200.

Del Guercio, D. and P. Tkac, 2002, The determinants of the flow of funds of managed portfolios: mutual funds versus pension funds, *Journal of Financial and Quantitative Analysis* 37(4), 523-557.

Edelen, R., 1999, Investor flows and the assessed performance of open-end mutual funds, *Journal of Financial Economics* 53, 439-466.

Frazzini, A. and O. Lamont, Dumb money: mutual fund flows and the cross section of stock returns, Working Paper Yale University.

Gaspar, J., M. Massa, and P. Matos, 2004, Favoritism in mutual fund family? Evidence on the strategic cross-fund subsidization, *Journal of Finance*, forthcoming.

Geczy, C.C., R.F. Stambaugh, and D. Levin, 2003, Investing in socially responsible mutual funds, Working Paper Wharton School.

Gregory, A., J. Matatko, and R. Luther, 1997, Ethical unit trust financial performance: small company effects and fund size effects, *Journal of Business Finance and Accounting* 24, 705-725.

Goetzmann, W. and N. Peles, 1997, Cognitive dissonance and mutual funds' investors, *Journal of Financial Research* 20(2), 145-158.

Goetzmann, W., W. Ivkovich, and K. Rouwenhorst, 2001, Day trading international mutual funds: evidence and policy solutions, *Journal of Financial and Quantitative Analysis* 36, 287-309.

Gruber, M., 1996, Another puzzle: the growth in actively managed mutual funds, *Journal of Finance* 51, 783-810.

Hamilton, S., H. Jo and M. Statman, 1993, Doing well while doing good? The investment performance of socially responsible mutual funds, *Financial Analysts Journal* 49 (6), 62-66.

Jain, P. and J. Wu, 2000, Truth in mutual fund advertising: evidence on future performance and fund flows, *Journal of Finance* 55 (2), 937-958.

Khorana, A. and H. Servaes, 2004, Conflicts of interest and competition in the mutual fund industry, Working Paper London Business School.

Kreander, N., G.H. Gray, D.M. Power and C.D. Sinclair, 2005, Evaluating the performance of Ethical and Non-SRI funds: a matched pair analysis, *Journal of Business, Finance and Accounting* 32(7), 1465 -1493

Luther, R., J. Matatko and D. Corner, 1992, The investment performance of UK ethical unit trusts, *Accounting, Auditing & Accountability Journal* 5(4), 57-70.

Massa, M., 2003, How do family strategies affect fund performance? When performance-maximization is not the only game in town, *Journal of Financial Economics* 67, 249-304

Nanda, V., Z.J. Wang, and L. Zheng, 2004, Family values and the star phenomenon, *Review of Financial Studies* 17(3), 667-698.

Sapp, T. and A. Tiwari, 2004, Does stock return momentum explain the smart money effect?, *Journal of Finance*, forthcoming.

Schroder, M., 2004, The performance of socially responsible investments: investment funds and indices, *Financial Markets and Portfolio Management 18(2)*, 122-142.

Sirri, E. and P. Tufano, 1998, Costly search and mutual fund flows, *Journal of Finance* 53, 1589-1622.

Social Investment Forum, 2003, Report on responsible investing trends in the US.

Statman, M., 2000, Socially responsible mutual funds, *Financial Analysts Journal* 56 (3), 30-39.

Tufano, P. and M. Sevick, 1997, Board structure and fee-setting in the US mutual fund industry, *Journal of Financial Economics* 46, 321-356.

Zheng, L., 1999, Is money smart? A study of mutual fund investors' fund selection ability, *Journal of Finance* 54, 901-933.

Table 1: Socially Responsible Investment (SRI) Screens

This table reports the 21 investment screens used by SRI funds around the world which are classified into 4 broad categories. SRI funds often use a combination of the screens. 'N' represents a negative screen (funds avoid specific industries or firms); 'P' denotes a positive screen (funds select firms based on relative criteria).

Categories	Type	Screens	Definitions
Sin	N	Tobacco	Avoiding manufacturers of tobacco products
	N	Alcohol	Avoiding producers of alcoholic beverages
	N	Gambling	Avoiding casinos and suppliers of gambling equipment
	N	Weapons	Avoiding firms producing weapons or firearms
	N	Pornography	Avoiding publishers of pornographic magazines or video tapes, or firms that provide adult-entertainment services
Ethical	N	Animal Test	Avoiding firms providing animal-testing services or involved in intensive farming of animals
	N	Abortion	Avoiding providers of abortion and manufacturers of abortion drugs or insurance companies that pay for elective abortions
	N	Genetic Engineering	Avoiding firms developing genetically-modified products
	P	Healthcare	Selecting firms whose products improve human health
	N	Non-Marital	Avoiding insurance companies providing coverage to non-married couples
	N	Islamic	Avoiding pork producers and commercial banks (Used by funds managed according to Islamic principles)
Social	P	Business Practice	Selecting firms emphasizing product safety and quality
	P	Corporate Governance	Selecting firms demonstrating best practices related to board independence, executive compensation, or other governance issues
	P	Community	Selecting firms with an active involvement in local communities
	P/N	Diversity	Selecting firms pursuing active policies in employing minorities, women, gays/lesbians, and/or disabled persons; or Avoiding firms discriminating on gender/race
	P/N	Labor Relations	Selecting firms providing good workplace conditions, empowering employee and/or strong union relationships; or Avoiding firms with poor labor relations
	P/N	Human Rights	Selecting firms with policies to protect human rights; or Avoiding firms with bad records on human rights issues
	P/N	Foreign Operations	Selecting firms with human rights policies for foreign operations; or Avoiding firms employing child labor overseas or operating in countries with oppressive regimes
Environmental	P/N	Environment	Selecting firms with high environmental standards; or Avoiding firms with low environmental standards
	P	Renewable Energy	Selecting firms producing power from renewable energy
	N	Nuclear	Avoiding companies operating nuclear power plants
Activism Policy	SRI funds attempt to influence company actions through direct dialogue with management and/or voting at the annual general meetings		
In-House SRI Research	Screening activity is based on in-house SRI research		

Table 2: Cross-Sectional Characteristics of Equity SRI funds

Panel A of Table 2 reports the number of funds, the number of fund families, the average and median age (years since funds' inception), and the average and median assets under management (in million €) per fund for SRI funds around the world at the end of 2003. A fund family consists of the funds issued by the same financial institution. Panel B reports the cross-sectional characteristics of our benchmark sample of non-SRI funds in the UK.

	No. Funds	No. Families	Mean Age	Median Age	Mean AUM	Median AUM	Total AUM
Panel A: Sample of SRI funds by country							
(1) Europe (excluding UK)							
Austria	16	6	2.0	1.6	3.4	2.7	54
Belgium	18	5	3.6	3.0	24.4	9.1	438
France	55	32	3.9	3.3	22.7	10.3	1250
Germany	2	2	8.0	8.0	51.5	51.5	103
Ireland	9	6	4.3	2.8	5.5	1.5	50
Italy	7	7	4.4	1.8	83.1	9.8	582
Luxemburg	55	29	4.6	3.4	41.3	11.0	2273
Netherlands	13	9	4.0	3.4	61.3	20.5	797
Sweden	3	2	7.6	8.9	33.5	7.6	100
Switzerland	4	2	3.6	3.4	45.1	29.2	180
Total	182	100	4.1	3.1	32.0	8.8	5828
(2) US							
US	93	32	8.0	6.7	142.1	17.9	13211
(3) UK							
UK	49	21	9.2	7.5	100.7	49.8	4932
Isle of Man	2	1	3.8	3.8	2.4	2.4	5
Guernsey	1	1	9.5	9.5	27.8	27.8	28
Total	52	23	9.0	7.2	95.5	48.4	4964
(4) Rest of the World							
Australia	36	11	5.2	2.8	7.9	1.7	285
Cayman Islands	1	1	3.8	3.8	2.4	2.4	2
Japan	13	10	5.0	4.2	42.8	24.8	556
Malaysia	26	19	6.2	2.4	42.6	22.9	1109
NL Antilles	1	1	6.0	6.0	119.0	119.0	119
Singapore	2	2	3.9	3.9	0.7	0.7	1
South Africa	4	3	5.0	3.1	28.2	14.4	113
Total	83	47	5.4	2.8	26.3	6.9	2186
Panel B: Sample of SRI funds and non-SRI funds							
SRI (World)	410	202	5.9	4.0	63.9	14.1	26189
Non-SRI (UK)	649	121	12.5	10.0	270.0	71.4	175230

Table 3: Summary Statistics

Panel A of Table 3 reports the average and standard deviation of money-flows, the returns, the flow volatility (measured in 12-month rolling windows), the risk (the standard deviation of returns in 12-month rolling windows), the fund size (the natural logarithm of fund assets in €), the total fees (the sum of the annual management fee and one seventh of the load fees) expressed as a percentage of the money invested, the number of funds per fund family, the fraction of funds investing in particular geographical areas (domestic, European or global), and the number of SRI screens used per fund over our sample period 1992–2003. The statistics are computed over time and across funds. Panel B reports the same statistics for all SRI and non-SRI funds in our sample. Panel C shows the average number of screens used per fund, the average number of negative or positive screens used, the average number of sin, ethical, social and environmental screens used. Furthermore, it reports the fraction of the funds that use negative, positive, sin, ethical, social, environmental or Islamic screens, and of those engaging in activism or basing their screening activity on in-house research.

Panel A: SRI Funds By Region

	Europe ex. UK		**US**		**UK**		**Rest of World**	
Variable	**Mean**	**St.Dev.**	**Mean**	**St.Dev.**	**Mean**	**St.Dev.**	**Mean**	**St.Dev.**
Flow	0.028	*0.142*	0.036	*0.145*	0.027	*0.140*	0.030	*0.160*
Return	-0.006	*0.060*	0.001	*0.057*	-0.001	*0.049*	0.002	*0.048*
Flow Volatility	0.088	*0.109*	0.071	*0.123*	0.070	*0.120*	0.089	*0.132*
Size	2.454	*1.664*	3.111	*1.934*	3.784	*1.509*	1.610	*2.888*
Risk	0.057	*0.020*	0.053	*0.023*	0.047	*0.016*	0.042	*0.022*
Total Fees	0.017	*0.006*	0.019	*0.008*	0.018	*0.006*	0.021	*0.006*
Management Fees	0.013	*0.005*	0.016	*0.007*	0.013	*0.004*	0.015	*0.005*
Load Fees	0.028	*0.020*	0.018	*0.024*	0.035	*0.022*	0.040	*0.027*
Number of Funds in Family	3.443	*3.293*	6.161	*6.038*	3.788	*3.244*	3.530	*3.240*
D European Diversification	0.328	*0.471*	0.000	*0.000*	0.038	*0.194*	0.000	*0.000*
D Global Diversification	0.607	*0.490*	0.161	*0.370*	0.404	*0.495*	0.169	*0.377*
D Domestic investment	0.066	*0.248*	0.839	*0.370*	0.558	*0.502*	0.831	*0.377*
Number of Screens	6.623	*3.973*	8.140	*4.560*	9.519	*4.128*	5.590	*2.692*

Panel B: SRI and Non-SRI Funds

	SRI (Overall)		**Non-SRI (UK)**	
Variable	**Mean**	**St.Dev.**	**Mean**	**St.Dev.**
Flow	0.035	*0.162*	0.016	*0.117*
Return	0.000	*0.054*	0.005	*0.055*
Flow Volatility	0.079	*0.121*	0.064	*0.087*
Size	2.601	*2.214*	4.182	*1.569*
Risk	0.050	*0.022*	0.049	*0.018*
Total Fees	0.018	*0.007*	0.018	*0.006*
Management Fees	0.014	*0.005*	0.013	*0.004*
Load Fees	0.029	*0.024*	0.039	*0.019*
Number of Funds in Family	4.119	*4.200*	10.119	*7.088*
D European Diversification	0.151	*0.358*	0.026	*0.160*
D Global Diversification	0.392	*0.489*	0.536	*0.499*
D Domestic Investment	0.457	*0.499*	0.438	*0.500*
Number of Screens	7.124	*4.098*	N/A	N/A

(Table 3 – Continued)

Panel C: Screening Activity by SRI Funds

	Europe ex. UK	US	UK	Rest of World	Overall
By fund: Average number of					
Screens	6.62	8.14	9.52	5.59	7.12
Negative screens	3.00	4.55	5.85	3.51	3.81
Positive screens	3.62	3.59	3.67	2.08	3.31
Sin screens	1.73	3.31	3.60	2.69	2.52
Ethical screens	0.56	0.67	1.40	0.53	0.68
Social screens	2.70	2.71	2.62	1.49	2.45
Environmental screens	1.63	1.45	1.90	0.88	1.47
Fraction of funds with					
Negative screens	0.56	0.97	0.85	0.72	0.72
Positive screens	0.92	0.69	0.87	0.58	0.79
Sin screens	0.54	0.92	0.85	0.67	0.69
Ethical screens	0.38	0.57	0.85	0.52	0.51
Social screens	0.78	0.68	0.85	0.47	0.70
Environmental screens	0.88	0.72	0.94	0.60	0.80
Islamic screens	0.03	0.03	0.02	0.36	0.09
Activism policy	0.18	0.47	0.31	0.06	0.24
In-house SRI research	0.22	0.55	0.27	0.11	0.28

Table 4: Money-Flows and Past Performance

This table presents the OLS estimates of the relation between money-flows and past performance (Equation (2)) for SRI funds (Panel A) and Non-SRI funds in the UK (Panel B). The dependent variable is the money-flow of fund *i* in month *t* ($Flow_{i,t}$) as by Equation (1). The independent variables include: the average returns of fund *i* over the months *t-1* to *t-12* and *t-13* to *t-24* ($Average\ Return_{i,[t-1,t-12]}$ and $Average\ Return_{i,[t-13,t-24]}$), interaction variables of the average returns and indicator variables that are equal to 1 if $Average\ Return_{i,[t-1,t-12]}$ and $Average\ Return_{i,[t-13,t-24]}$ are negative ($D(Negative\ Return_{i,[t-1,t-12]})$ and $D(Negative\ Return_{i,[t-13,t-24]})$). Size is measured as the natural logarithm of AUM in € ($Size_{i,t-1}$). The total risk is the Std. Dev. of monthly fund returns ($Risk_{i,t-1}$)). Age is the number of years ($Age_{i,t-1}$). We also include an interaction term of age and a dummy equalling 1 if the age is below the median of all SRI (or conventional) funds in its domicile ($Age_{i,t-1}$* $D(Young_{i,t-1})$). $Total\ Fees_i$ is the sum of the annual management fee and $1/7^{th}$ of the sum of front- and the back-end load fees. We also include an interaction term of total fees and an dummy equalling 1 if the total fees are above the median total fees of all funds in the domicile ($Total\ Fees_i$ *$D(High\ Fees_i)$). The money-flow in month *t-1* is $Flow_{i,t-1}$. $D(Top\ Performer\ Family_{i,t-1})$ equals 1 if the raw returns of at least one SRI (or conventional) fund in the funds' family belongs to the top 20% of all funds in its domicile. $Number\ Funds\ Family_{i,\ t-}$, is the number of SRI (or conventional) funds managed by the funds' family, $D(Market\ Leader\ Family_{i,t-1})$ equals 1 if the funds' family has the highest market share in its domicile, $D(European\ Diversification_i)$ and $D(Global\ Diversification_i)$ equal 1 if the fund invests across Europe or Globally. $Number\ of\ Screens_i$ is the number of SRI screens employed and 4 dummies equal 1 if the fund uses at least 1 of the main SRI screens $(D(Sin\ Screens_i), D(Ethical\ Screens_i), D(Social\ Screens_i)$ and $D(Environmental\ Screens_i))$. $D(Islamic\ Fund_i)$ captures whether the fund is designed for Islamic investors, $D(Activism\ Policy_i)$ equals 1 if the fund aims at actively influencing corporate behaviour, $D(In\text{-}House\ SRI\ Research_i)$ equals 1 if the fund has in-house SRI research. We include dummies based on the domicile of the fund ($D(Europe\ ex.\ UK_i)$, $D(US_i)$ and $D(Rest\ of\ World_i)$), and 9 year dummies and 11 month dummies. Note that the coefficients on indicator variables (denoted with a prefix "D") and the count variables (i.e. Constant, Age, Age *D Young, Number of Funds and Number of Screens) are multiplied by 100. The t-statistics are in *Italics*, calculated with White standard errors to account for heterogeneity. Bold coefficients indicate a significance level of at least 5%.

(Table 4 – Continued)

		Panel A: SRI		**Panel B: Non-SRI**	
Dependent variable		Money-Flow		Money-Flow	
	Constant	**1.912**	*2.378*	**3.999**	*5.352*
Past Performance	Average Return (t-1, t-12)	**0.948**	*7.279*	**0.776**	*7.460*
	Average Return (t-1, t-12) * D Negative Return (t-1, t-12)	**-0.746**	*-4.269*	**-0.461**	*-3.031*
	Average Return (t-13, t-24)	**0.598**	*4.278*	**0.228**	*3.040*
	Average Return (t-13, t-24) * D Negative Return (t-13, t-24)	**-0.514**	*-2.752*	0.108	*0.725*
Fund Characteristics	Size (t-1)	**-0.003**	*-5.040*	**-0.003**	*-5.098*
	Risk $(t\text{-}1,t\text{-}12)_i$	0.068	*1.214*	**0.172**	*2.754*
	Age (t-1)	**-0.048**	*-3.536*	**-0.033**	*-4.484*
	Age (t-1) * D Young (t-1)	0.099	*1.436*	-0.015	*-0.611*
	Total Fees	0.381	*1.378*	**-0.897**	*-3.795*
	Total Fees * D High Fees	**-0.470**	*-3.061*	**0.332**	*4.020*
Past Flows	Flow (t-1)	-0.009	*-0.804*	**-0.122**	*-6.914*
Fund Family	D Top Performer Family (t-1)	0.348	*1.492*	**0.306**	*2.020*
	Number Funds in Family (t-1)	**0.060**	*2.143*	0.040	*1.776*
	D Market Leader Family (t-1)	-0.220	*-0.855*	0.594	*1.731*
International Diversification	D European Diversification	0.985	*1.634*	-0.685	*-1.690*
	D Global Diversification	0.169	*0.641*	**-0.478**	*-3.266*
Screening Activity	Number of Screens	**0.124**	*3.128*		
	D Sin Screens	0.572	*1.520*		
	D Ethical Screens	**-1.011**	*-3.675*		
	D Social Screens	-0.288	*-1.125*		
	D Environmental Screens	**-0.930**	*-3.353*		
	D Islamic Fund	0.365	*0.765*		
	D Activism Policy	-0.506	*-1.906*		
	D In-House SRI Research	0.331	*1.468*		
Geographical Location	D Europe (ex. UK)	**-1.023**	*-2.598*		
	D US	**-0.872**	*-2.181*		
	D Rest of World	**-1.658**	*-3.371*		
Time Effect	D Year	Yes		Yes	
	D Month	Yes		Yes	
	Adjusted R^2 / F-statistics	0.021	7.873	0.029	22.110
	Observations	15364		24105	

Table 5: Flows and Past Relative Performance

This table presents the OLS estimates of the relation between fund flows and past relative performance (Equation (3)) for SRI funds (Panel A) and Non-SRI funds(Panel B). The dependent variable is the money-flow of fund *i* in month *t*, $Flow_{i,t}$, defined as the net change of fund assets beyond reinvested dividends (Equation (1)). The independent variables include lagged fractional rank quintiles (*Rank Bottom Quintile, Rank Middle Quintile* and *Rank Top Quintile).* The calculation of these rank quintiles is given in Section III. Other independent variables are defined in Table 4. The coefficients of the indicator variables (denoted with a prefix "D") and count variables (i.e. Constant, Age, Age *D Young, Number of Funds and Number of Screens) have been multiplied by 100. T-statistics are in *Italics* and are calculated with White standard errors to account for heterogeneity. Bold coefficients indicate a significance level of at least 5%.

		Panel A: SRI		**Panel B: Non-SRI**	
Dependent variable		Money-Flow		Money-Flow	
	Constant	0.266	*0.277*	**4.845**	*5.568*
Relative Past Performance	Rank Bottom Quintile (t-1, t-12)	0.028	*1.261*	-0.012	*-0.711*
	Rank Middle Quintile (t-1, t-12)	**0.021**	*4.154*	**0.019**	*4.524*
	Rank Top Quintile (t-1, t-12)	**0.108**	*3.193*	**0.098**	*4.626*
	Rank Bottom Quintile (t-13, t-24)	0.024	*1.104*	0.017	*0.872*
	Rank Middle Quintile (t-13, t-24)	**0.018**	*3.530*	**0.010**	*2.454*
	Rank Top Quintile (t-13, t-24)	0.064	*1.744*	0.029	*1.763*
Fund Characteristics	Size (t-1)	**-0.003**	*-5.165*	**-0.003**	*-4.855*
	Risk (t-1,t-12)	0.056	*1.198*	0.050	*0.855*
	Age (t-1)	**-0.040**	*-2.823*	**-0.032**	*-4.307*
	Age (t-1) * D Young (t-1)	0.118	*1.732*	-0.014	*-0.593*
	Total Fees	0.455	*1.623*	**-0.928**	*-3.894*
	Total Fees * D High Fees	**-0.500**	*-3.213*	**0.338**	*4.097*
Past Flows	Flow (t-1)	-0.010	*-0.837*	**-0.123**	*-6.921*
Fund Family	D Top Performer Family (t-1)	-0.254	*-0.985*	0.134	*0.889*
	Number Funds in Family (t-1)	**0.092**	*3.081*	**0.049**	*2.160*
	D Market Leader Family (t-1)	-0.290	*-1.075*	0.555	*1.617*
International Diversification	D European Diversification	1.055	*1.728*	-0.588	*-1.442*
	D Global Diversification	0.370	*1.350*	**-0.359**	*-2.447*
Screening Activity	Number of Screens	**0.104**	*2.569*		
	D Sin Screens	0.555	*1.443*		
	D Ethical Screens	**-0.917**	*-3.254*		
	D Social Screens	0.010	*0.039*		
	D Environmental Screens	**-0.947**	*-3.437*		
	D Islamic Fund	0.779	*1.607*		
	D Activism Policy	**-0.668**	*-2.484*		
	D In-House SRI Research	0.350	*1.552*		
Geographical Location	D Europe (ex. UK)	**-0.970**	*-2.423*		
	D US	**-0.819**	*-2.004*		
	D Rest of World	**-1.656**	*-3.309*		
Time Effect	D Year	Yes		Yes	
	D Month	Yes		Yes	
	Adjusted R^2 / F-statistics	0.022	8.024	0.029	21.195
	Observations	15110		24105	

Table 6: Money-Flows and Persistence in Past Performance

This table presents the OLS estimates of the relationship between fund flows and persistence in past performance (Equation (4)) for SRI funds (Panel A) and non-SRI funds in the UK (Panel B). The dependent variable is the money-flows of fund *i* in month *t*, $Flow_{i,t}$, defined as the net change of assets beyond reinvested dividends (Equation (1)). The independent variables include an indicator variable which equals 1 if fund *i* is a 'return winner' for both the period from *t-1* to *t-12* and the period from *t-13* to *t-24* and zero otherwise ($D(Persistent\ Winner_{i,[t-1,t-24]})$), where a winner is a fund whose average return over month *t-1* to month *t-12* is higher than the average return of the median fund in the domicile. $D(Persistent\ Loser_{i,[t-1,t-24]})$ is an indicator variable that equals one if fund *i* is a loser for both the periods from *t-1* to *t-12* and from *t-13* to *t-24* and zero otherwise, and $D(Loser\ to\ Winner_{i,[t-1,t-24]})$ is an indicator variable that equals one if fund *i* is a winner over the period from *t-1* to *t-12* and a loser from *t-13* to *t-24* and zero otherwise. Other independent variables are defined in Table 4. The coefficients of the indicator variables (denoted with a prefix "D") and count variables (i.e. Constant, Age, Age *D Young, Number of Funds and Number of Screens) have been multiplied by 100. The t-statistics are in *Italics*, calculated with White standard errors to account for heterogeneity. Bold coefficients denote a significance level of at least 5%.

		Panel A: SRI		**Panel B: Non-SRI**	
Dependent variable		Money-Flow		Money-Flow	
	Constant	**2.932**	*3.845*	**5.614**	*7.621*
Performance Persistence	D Persistent Winner (t-1, t-24)	**0.782**	*3.098*	**1.081**	*5.233*
	D Persistent Loser (t-1, t-24)	**-1.601**	*-6.932*	**-0.814**	*-4.119*
	D Loser to Winner (t-1, t-24)	-0.195	*-0.720*	**-0.595**	*-3.245*
Fund Characteristics	Size (t-1)	**-0.003**	*-4.668*	**-0.003**	*-4.851*
	Risk (t-1,t-12)	0.052	*1.132*	0.098	*1.747*
	Age (t-1)	**-0.045**	*-3.324*	**-0.032**	*-4.240*
	Age (t-1) * D Young (t-1)	0.117	*1.710*	-0.012	*-0.487*
	Total Fees	0.419	*1.503*	**-0.870**	*-3.684*
	Total Fees * D High Fees	**-0.469**	*-3.036*	**0.359**	*4.319*
Past Flows	Flow (t-1)	-0.009	*-0.774*	**-0.121**	*-6.832*
Fund Family	D Top Performer Family (t-1)	0.282	*1.212*	**0.320**	*2.120*
	Number Funds in Family (t-1)	0.054	*1.883*	0.037	*1.625*
	D Market Leader Family (t-1)	-0.193	*-0.734*	0.604	*1.762*
International Diversification	D European Diversification	0.958	*1.598*	-0.422	*-1.028*
	D Global Diversification	0.253	*0.934*	-0.266	*-1.829*
Screening Activity	Number of Screens	**0.114**	*2.823*		
	D Sin Screens	0.476	*1.257*		
	D Ethical Screens	**-0.723**	*-2.647*		
	D Social Screens	-0.070	*-0.272*		
	D Environmental Screens	**-1.003**	*-3.659*		
	D Islamic Fund	0.650	*1.361*		
	D Activism Policy	**-0.603**	*-2.244*		
	D In-House SRI Research	0.431	*1.915*		
Geographical Location	D Europe (ex. UK)	**-0.970**	*-2.421*		
	D US	-0.710	*-1.767*		
	D Rest of World	**-1.754**	*-3.552*		
Time Effect	D Year	Yes		Yes	
	D Month	Yes		Yes	
	Adjusted R^2 / F-statistics	0.021	7.999	0.027	21.749
	Observations	15291		24105	

Table 7: Determinants of Flow Volatility

This table presents the OLS estimates of the determinants of flow volatility (Equation (5)) for SRI funds (Panel A) and Non-SRI funds in the UK (Panel B). The dependent variable is the standard deviation of monthly money-flows of fund *i* over months *t* to *t-11 (Flow Volatility* $_{I,[t,t-11]}$*)*. The independent variables have been defined in Table 4. Note that the coefficients on indicator variables (denoted with a prefix "D") and the count variables (i.e. Constant, Age, Age *D Young, Number of Funds and Number of Screens) have been multiplied by 100. The t-statistics are in *Italics*, calculated with White standard errors to account for heterogeneity. Bold coefficients indicate a significance level of at least 5%.

		Panel A: SRI		**Panel B: Non-SRI**	
Dependent variable		Flow Volatility		Flow Volatility	
	Constant	**7.412**	*10.831*	**9.205**	*18.110*
Past Performance	Average Return (t-12, t-23)	**0.789**	*6.654*	**0.368**	*5.250*
	Average Return (t-12, t-23) * D Negative Return (t-12, t-23)	-0.211	*-1.273*	**-0.811**	*-7.026*
Fund Characteristics	Size (t-12)	**-0.008**	*-12.584*	**-0.009**	*-17.951*
	Risk (t-12)	**0.330**	*7.591*	**0.120**	*2.693*
	Age (t-12)	**-0.096**	*-8.045*	**-0.042**	*-6.786*
	Age (t-12) * D Young (t-12)	-0.077	*-1.362*	-0.036	*-1.915*
	Total Fees	0.381	*1.597*	-0.045	*-0.266*
	Total Fees * D High Fees	**-0.696**	*-5.463*	**0.321**	*4.924*
Past Flows	Average Flow (t-12,t-23)	**0.034**	*3.235*	**0.177**	*8.211*
Fund Family	D Top Performer Family (t-12)	**0.421**	*2.142*	**0.716**	*5.631*
	Number Funds in Family (t-12)	**0.057**	*2.196*	**0.169**	*8.838*
	D Market Leader Family (t-12)	**0.907**	*3.258*	**2.098**	*7.704*
International Diversification	D European Diversification	**2.068**	*4.751*	**-1.031**	*-3.098*
	D Global Diversification	**-0.538**	*-2.259*	-0.086	*-0.668*
Screening Activity	Number of Screens	**0.175**	*5.093*		
	D Sin Screens	-0.139	*-0.466*		
	D Ethical Screens	**-1.446**	*-6.795*		
	D Social Screens	-0.059	*-0.279*		
	D Environmental Screens	**-0.786**	*-3.670*		
	D Islamic Fund	0.099	*0.265*		
	D Activism Policy	**-1.356**	*-5.682*		
	D In-House SRI Research	**-0.559**	*-3.145*		
Geographical Location	D Europe (ex. UK)	**-0.709**	*-1.957*		
	D US	**-2.299**	*-6.592*		
	D Rest of World	**-2.028**	*-4.317*		
Time Effect	D Year	Yes		Yes	
	D Month	Yes		Yes	
	Adjusted R^2 / F-statistics	0.088	31.216	0.094	67.582
	Observations	14043		21870	

Table 8: Money-Flows and Future Returns

This table presents the OLS estimates of the relationship between future returns and past money-flows (Equation (6)) for SRI funds (Panel A) and Non-SRI funds in the UK (Panel B). The dependent variables are the raw return of fund *i* in month *t (Return$_{i,t}$),* and the *Abnormal Return.* The independent variables have been defined in Table 4. The coefficients on indicator variables (denoted with a prefix "D") and the count variables (i.e. Constant, Age, Age *D Young, Number of Funds and Number of Screens) have been multiplied by 100. The t-statistics are in *Italics*, calculated with White standard errors to account for heterogeneity. Bold coefficients indicate a significance level of at least 5%.

		Panel A: SRI				**Panel B: Non SRI**			
Dependent variable		Raw Return		Abnormal Return		Raw Return		Abnormal Return	
	Constant	-0.413	*-1.208*	-0.723	*-2.155*	0.001	*-0.001*	-0.497	*-1.706*
Past Flows	Average Flow (t-1, t-12)	-0.011	*-1.890*	**-0.012**	*-1.995*	-0.012	*-0.533*	-0.001	*-0.043*
Fund Characteristics	Size (t-1)	**-0.001**	*-2.519*	**-0.001**	*-2.254*	**-0.001**	*-4.622*	**-0.001**	*-4.346*
	Size (t-1)*Average Flow (t-1,t-12)	0.002	*0.699*	0.002	*1.026*	0.000	*0.024*	-0.001	*-0.236*
	Risk (t-1,t-12)	**-0.082**	*-2.656*	**-0.108**	*-3.529*	-0.038	*-1.249*	-0.046	*-1.516*
	Age (t-1)	-0.002	*-0.260*	-0.003	*-0.348*	0.002	*0.696*	0.002	*0.707*
	Age (t-1) * D Young (t-1)	0.020	*0.671*	0.022	*0.742*	0.003	*0.240*	0.002	*0.143*
	Total Fees	0.008	*0.079*	0.028	*0.266*	-0.052	*-0.578*	-0.042	*-0.463*
	Total Fees * D High Fees	-0.077	*-1.271*	-0.089	*-1.485*	**0.105**	*2.817*	**0.104**	*2.772*
Past Performance	Average Return (t-1, t-12)	**0.074**	*2.056*	-0.025	*-0.696*	0.023	*0.833*	-0.042	*-1.513*
Fund Family	D Top Performer Family (t-1)	**0.191**	*2.239*	**0.283**	*3.336*	0.098	*1.347*	0.140	*1.917*
	Number Funds in Family (t-1)	-0.013	*-1.139*	-0.019	*-1.753*	0.003	*0.310*	-0.001	*-0.052*
	D Market Leader Family (t-1)	0.185	*1.606*	0.198	*1.732*	0.039	*0.294*	0.053	*0.398*
Internat. Diversification	D European Diversification	-0.086	*-0.461*	-0.130	*-0.704*	0.006	*0.031*	0.013	*0.064*
	D Global Diversification	-0.112	*-1.116*	-0.139	*-1.397*	**-0.345**	*-5.528*	**-0.342**	*-5.452*
Screening Activity	Number of Screens	**0.042**	*2.101*	**0.046**	*2.320*				
	D Sin Screens	-0.159	*-1.201*	-0.237	*-1.788*				
	D Ethical Screens	-0.039	*-0.341*	-0.019	*-0.172*				
	D Social Screens	-0.111	*-0.884*	-0.166	*-1.337*				
	D Environmental Screens	-0.271	*-1.934*	-0.257	*-1.840*				
	D Islamic Fund	0.058	*0.273*	0.048	*0.229*				
	D Activism Policy	-0.009	*-0.082*	-0.004	*-0.035*				
	D In-House SRI Research	0.072	*0.769*	0.093	*0.988*				
Geographical Location	D Europe (ex. UK)	-0.277	*-1.930*	-0.164	*-1.157*				
	D US	0.104	*0.740*	0.223	*1.608*				
	D Rest of World	-0.042	*-0.267*	0.036	*0.232*				
Time Effect	D Year	Yes		Yes		Yes		Yes	
	D Month	Yes		Yes		Yes		Yes	
	Adjusted R^2 / F-statistics	0.184	93.817	0.175	88.292	0.187	188.630	0.172	170.560
	Observations	18516		18488		27692		27663	

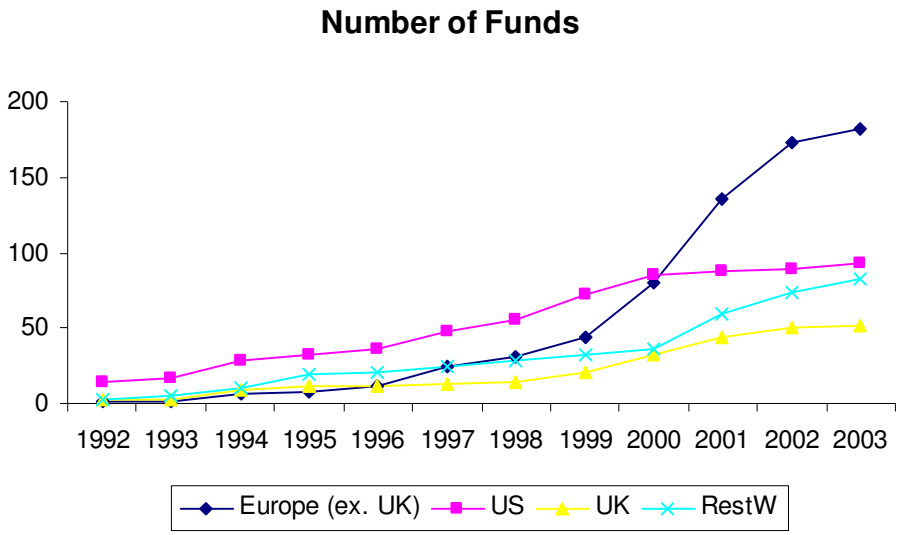
Table 9: Money-Flows and Persistence in Future Returns

This table presents the Probit estimates of the relationship between persistent in future returns and past flows (Equations (8) and (9)). The dependent variable for Panels A and C is an indicator variable equalling one if fund *i* is a winner for both the periods from *t-1* to *t-12* and from *t-13* to *t-24,* and zero otherwise (*D(Persistent Winner* $_{i, [t-1,t-24]}$*)),* where a winner is defined in Table 6. The dependent variable for Panels B and D is *D(Persistent Loser* $_{i, [t-1,t-24]}$*),* an indicator variable that equals one if fund *i* is a loser for both the periods from *t-1* to *t-12* and from *t-13* to *t-24,* and zero otherwise. The independent variables have been defined in Table 4. The coefficients on continuous independent variables (i.e. Average Flow, Size, Risk, Total Fees, Total Fees* D Young, and Average Return) have been divided by 100. The t-statistics are in *Italics*, calculated with White standard errors to account for heterogeneity. Bold coefficients indicate a significance level of at least 5%.

		Panel A: SRI		**Panel B: SRI**		**Panel C: Non-SRI**		**Panel D: Non-SRI**	
Dependent variable		Persistent Winner		Persistent Loser		Persistent Winner		Persistent Loser	
	Constant	**0.322**	*2.186*	**-1.886**	*-12.337*	**0.429**	*4.020*	**-1.045**	*-9.842*
Past Flows	Average Flow (t-24, t-35)	**-0.005**	*-2.127*	**0.007**	*2.924*	**-0.013**	*-4.609*	**0.009**	*3.469*
Fund Characteristics	Size (t-24)	**-0.001**	*-7.347*	**0.001**	*7.147*	**-0.001**	*-12.206*	**0.001**	*11.572*
	Risk (t-24)	-0.001	*-1.131*	0.001	*1.446*	**-0.082**	*-10.076*	0.009	*1.146*
	Age (t-24)	**-0.072**	*-9.043*	**0.072**	*9.633*	-0.001	*-0.660*	0.002	*1.499*
	Age (t-24) * D Young (t-24)	-0.004	*-1.499*	**0.011**	*4.391*	**-0.016**	*-4.771*	**0.012**	*3.700*
	Total Fees	0.003	*0.233*	-0.020	*-1.619*	**-0.082**	*-2.407*	**0.079**	*2.271*
	Total Fees * D High Fees	**-0.173**	*-4.227*	**0.103**	*2.323*	**0.080**	*6.247*	**-0.025**	*-1.941*
Past Performance	Average Return (t-24, t-35)	**-0.057**	*-2.493*	**0.098**	*4.064*	**-0.049**	*-6.252*	**0.077**	*10.439*
Fund Family	D Top Performer Family (t-24)	-0.007	*-0.644*	0.008	*0.778*	**0.078**	*3.084*	**-0.140**	*-5.547*
	Number Funds in Family (t-24)	**0.067**	*2.077*	-0.051	*-1.491*	**0.015**	*4.299*	**-0.011**	*-2.973*
	D Market Leader Family (t-24)	**0.008**	*2.088*	-0.006	*-1.299*	0.063	*1.554*	-0.073	*-1.769*
Internat. Diversification	D European Diversification	**0.128**	*3.075*	-0.018	*-0.408*	-0.001	*-0.018*	0.055	*0.727*
	D Global Diversification	**-0.691**	*-7.853*	**0.245**	*2.764*	**-0.390**	*-15.986*	**0.574**	*22.782*
Screening Activity	Number of Screens	**-0.425**	*-9.967*	**0.276**	*6.464*				
	D Sin Screens	**0.051**	*6.347*	**-0.064**	*-7.805*				
	D Ethical Screens	**-0.253**	*-4.699*	**0.245**	*4.424*				
	D Social Screens	**-0.227**	*-5.127*	**0.355**	*8.068*				
	D Environmental Screens	**-0.113**	*-2.459*	**0.163**	*3.479*				
	D Islamic Fund	**-0.190**	*-3.699*	**0.267**	*5.012*				
	D Activism Policy	0.127	*1.608*	**-0.257**	*-3.142*				
	D In-House SRI Research	**-0.105**	*-2.477*	**0.098**	*2.199*				
Geographical Location	D Europe (ex. UK)	**0.148**	*2.415*	0.080	*1.260*				
	D US	**-0.173**	*-3.095*	**0.174**	*3.060*				
	D Rest of World	-0.091	*-1.366*	**0.161**	*2.305*				
Time Effect	D Year	Yes		Yes		Yes		Yes	
	D Month	Yes		Yes		Yes		Yes	
	MF R^2 /Likelihood Ratio	0.064	815.470	0.066	757.100	0.057	1251.9	0.062	1356.1
	Observations	10163		10163		18304		18304	

Figure 1: Growth of the SRI fund Industry

The figure shows the year-end number of funds and assets under management (in € million) of the SRI fund industry in Europe (excluding the UK), the US, the UK and the rest of the world (RestW).



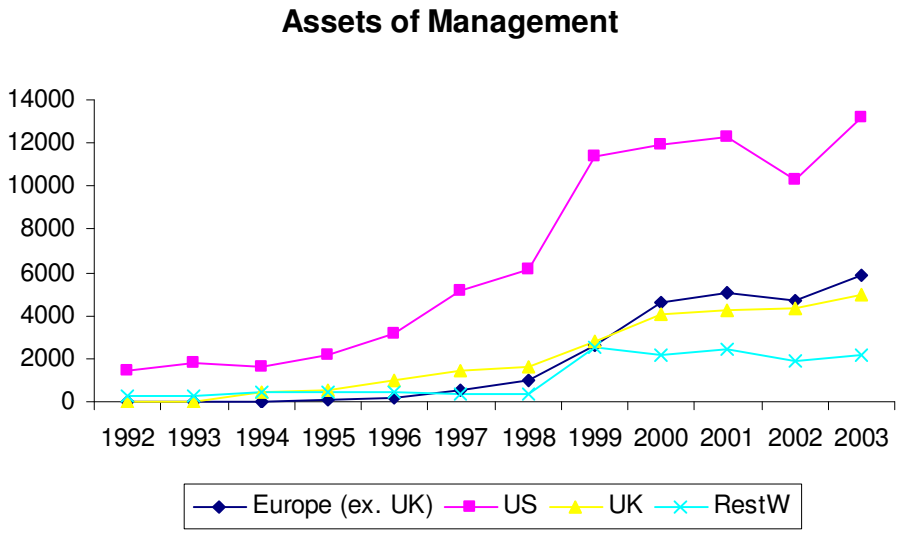
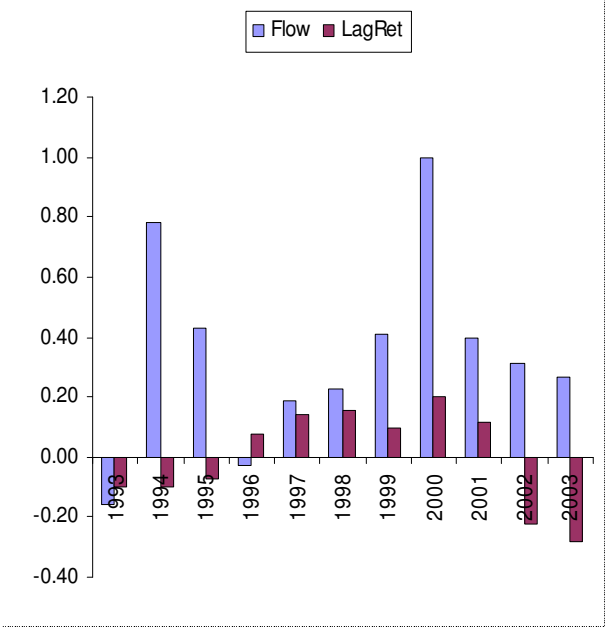


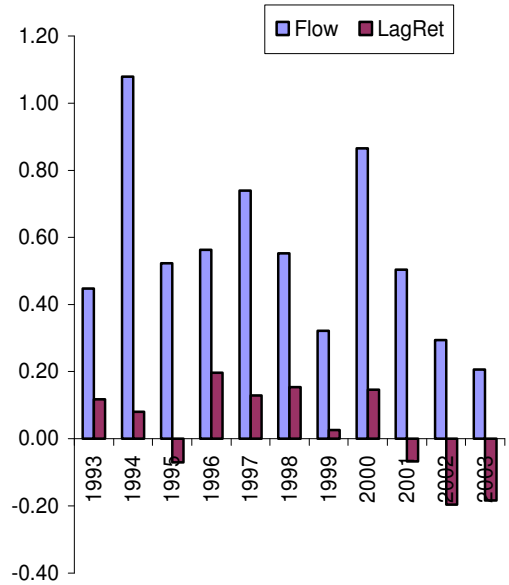
Figure 2: Flows and Lagged Returns

The figure shows the annual net flows (Flow) and the one-year-lagged annual returns (LagRet) of SRI funds in Europe (excluding the UK), the US, the UK and the Rest of the World.

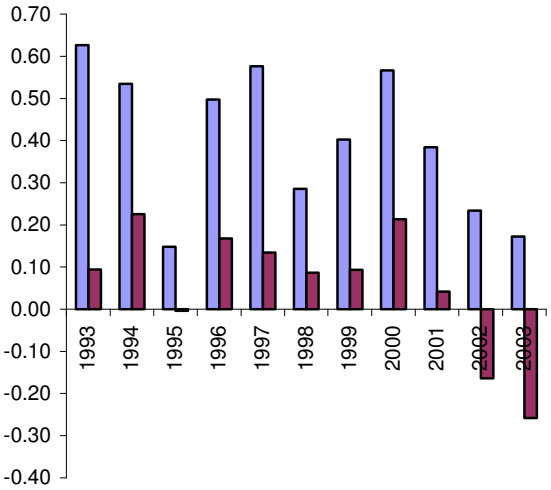
Europe (excluding UK)



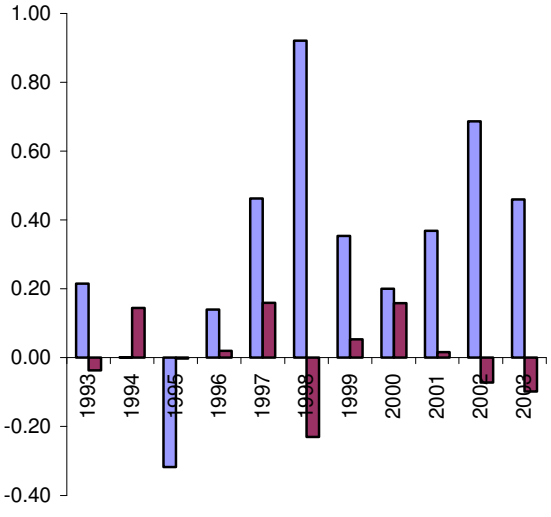
US



UK



Rest of the World



Appendix: Summary of Economic Effects

This table summarizes the economic effects of a standardized change (e.g. a change of one percent, an event (a dummy variable of 1), or a change of one standard deviation (1 S.D.)) in the explanatory variables in Tables 4-9.

Panel A: Determinants of money-flows (Tables 4-6)

	Expected Sign	Event Size	Impact on money-flows (per month)		Impact on money-flows (per annum)	
			SRI	Non-SRI	SRI	Non-SRI
Past Performance						
Average Return Positive	+	1%	0.95%	0.78%	11.4%	9.3%
Average Return Negative	+	1%	0.20%	0.31%	2.4%	3.7%
Rank Top Quintile	+	10%	1.08%	0.98%	13.3%	11.8%
Rank Bottom Quintile	+	10%	0	0	0	0
D Persistent Winner	+	1	0.78%	1.08%	9.4%	13.0%
D Persistent Loser	-	1	-1.60%	-0.81%	-19.2%	-9.7%
Fund Characteristics						
Size	-	1 S.D. (2.2)	-0.66%	-0.66%	-7.9%	-7.9%
Risk	-	1 S.D. (2.2%)	0	0.37%	0	4.5%
Age	-	1 S.D. (5.3)	-0.25%	-0.17%	-3.0%	-2.1%
Total Fees Low	-	1%	0	-0.90%	0	-10.8%
Total Fees High	-	1%	0	-0.57%	0	-6.8%
Past Flows						
Average Flow		1%	0	-0.12%	0	-1.4%
Fund Family						
D Top Performer Family	+	1	0	0.31%	0	3.7%
Number Funds in Family	+	1 S.D. (4.2)	0.30%	0.17%	3.6%	2.1%
D Market Leader Family		1	0	0	0	0
Int. Diversification						
D European Diversification		1	0	0	0	0
D Global Diversification		1	0	-0.48%	0	-5.8%
Screening Activity						
Number of Screens		1 S.D. (4.1)	0.51%		6.1%	
D Sin Screens		1	0		0	
D Ethical Screens		1	-1.01%		-12.0%	
D Social Screens		1			0	
D Environmental Screens		1	-0.93%		-11.1%	
D Islamic Fund		1	0		0	
D Activism Policy		1	-0.67%		-8.0%	
D In-House SRI Research		1	0		0	
Geographical Location						
D Europe (ex. UK)		1	-1.02%		-12.1%	
D US		1	-0.87%		-10.4%	
D Rest of World		1	-1.66%		-19.9%	

(Appendix – Continued)

Panel B: Determinants of flow volatility (Tables 7)

	Expected Sign	Event Size	Impact on flows volatility (per month)		Impact on flow volatility (per annum)	
			SRI	Non-SRI	SRI	Non-SRI
Past Performance						
Average Return Positive	+	1%	0.79%	0.37%	9.5%	4.4%
Average Return Negative	+	1%	0.79%	-0.45%	9.5%	-5.4%
Fund Characteristics						
Size	-	1 S.D. (2.2)	-1.76%	-1.98%	-21.1%	-23.8%
Risk	+	1 S.D. (2.2%)	0.73%	0.26%	8.8%	3.1%
Age	-	1 S.D. (5.3)	-0.51%	-0.22%	-6.1%	-2.6%
Total Fees Low	-	1%	0	0	0	0
Total Fees High	-	1%	-0.32%	0.28%	-3.8%	3.4%
Past Flows						
Average Flow		1%	0.03%	0.18%	0.4%	2.2%
Fund Family						
D Top Performer Family	+	1	0.42%	0.72%	5.0%	8.6%
Number Funds in Family	+	1 S.D. (4.2)	0.24%	0.71%	2.9%	8.5%
D Market Leader Family		1	0.91%	2.10%	10.9%	25.2%
Int. Diversification						
D European Diversification		1	2.07%	-1.03%	24.8%	-12.4%
D Global Diversification		1	-0.54%	0	-6.5%	0
Screening Activity						
Number of Screens		1 S.D. (4.1)	0.72%		8.6%	
D Sin Screens		1	0		0.0%	
D Ethical Screens		1	-1.45%		-17.4%	
D Social Screens		1	0		0	
D Environmental Screens		1	-0.79%		-9.5%	
D Islamic Fund		1	0		0	
D Activism Policy		1	-1.36%		-16.3%	
D In-House SRI Research		1	-0.56%		-6.7%	
Geographical Location						
D Europe (ex. UK)		1	-0.71%		-8.5%	
D US		1	-2.30%		-27.6%	
D Rest of World		1	-2.03%		-24.4%	

(Appendix – Continued)

Panel C: Determinants of abnormal returns and persistence (Tables 8-9)

	Expected Sign	Event Size	Impact on abnormal returns (per month)		Impact on abnormal returns (per annum)		Impact on probability being a persist. winner	
			SRI	Non-SRI	SRI	Non-SRI	SRI	Non-SRI
Past Flows								
Average Flow	-	1 S.D. (16%)	-0.20%	0	-2.3%	0	-3%	-6%
Fund Characteristics								
Size	-	1 S.D. (2.2)	-0.22%	-0.22%	-2.6%	-2.6%	-7%	-7%
Risk	-	1 S.D. (2.2%)	-0.22%	0	-2.6%	0	0	-5%
Age		1 S.D. (5.3)	0	0	0	0	-9%	0
Total Fees Low	-	1%	0	0	0	0	0	-2%
Total Fees High	-	1%	0	0.06%	0	0.72%	-5%	0
Past Performance								
Average Return		1%	0	0	0	0	-2%	-2%
Fund Family								
D Top Performer Family		1	0.28%	0	3.4%	0	0	2%
Number Funds in Family		1 S.D. (4.2)	0	0	0	0	7%	2%
D Market Leader Family		1	0	0	0	0	0	0
Int. Diversification								
D European Diversification		1	0	0	0	0	1%	0
D Global Diversification		1	0	-0.34%	0	-4.1%	-3%	-2%
Screening Activity								
Number of Screens		1 S.D. (4.1)	0.19%		2.3%		-8%	
D Sin Screens		1	0		0		0	
D Ethical Screens		1	0		0		-2%	
D Social Screens		1	0		0		-2%	
D Environmental Screens		1	0		0		-1%	
D Islamic Fund		1	0		0		-1%	
D Activism Policy		1	0		0		0	
D In-House SRI Research		1	0		0		-1%	
Geographical Location								
D Europe (ex. UK)		1	0		0		1%	
D US		1	0		0		-1%	
D Rest of World		1	0		0		0	